Gleanings in Bee Culture

Established 1873

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May, 1940

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Circulation Manager
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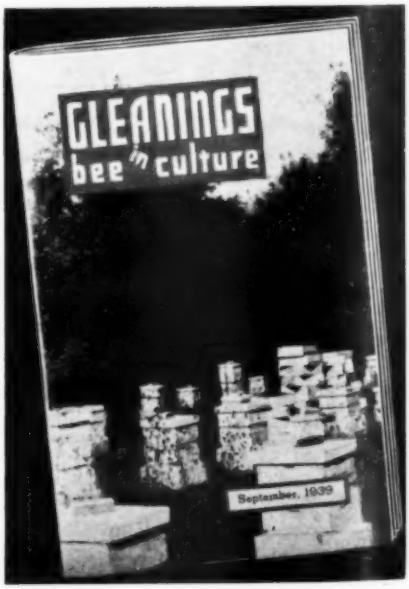

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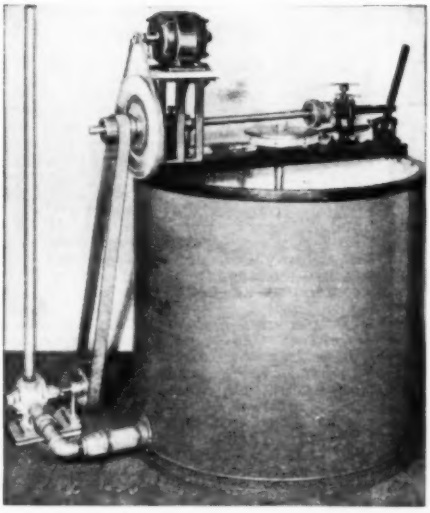

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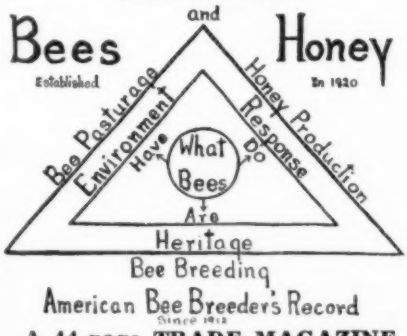

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The Monthly Honey Market

U. S. GOVERNMENT REPORT

Information from Producing Areas (last half of March).

California Points: Southern California—The weather has been rather unsettled, with considerable cloudiness and with limited amounts of rainfall in most sections. Temperatures were generally normal or above. The extent of the broodrearing varies in different sections. About half the colonies are said to have 2 to 4 frames of brood, while the others have 4 to 10 and occasionally 12 frames. In the orange section it is reported that only half of the colonies are ready for the Orange flow, and in some yards only 25 percent. Many apiaries are still being fed, though bees are working on alfilaria, mustard, eucalyptus, buckbrush, cottonwood, occasional oranges and lemons, mountain laurel, black sage, and gallberry. Pollen has increased as more mustard has come into bloom in the valleys and wild flowers in the hills, but some sections are still short of pollen. Oranges will be in full bloom by the 10th of April and in some groves will be sufficiently out so bees will be active shortly after the first of the month. The orange blossoming appears uneven—some trees and orchards have heavy budding; others, light. Swarming has already started and should be important in another week or two. Honey has been in fairly good demand, with prices slightly lower for Alfalfa honey, but with the market about steady on other types. Sales by beekeepers in ton lots or more at Southern California delivery points—Orange, White $6.30-6.75 per case of 120 pounds. Extra Light Amber $6.00 per case; White Eucalyptus new crop $4.50 per case.

Demand for beeswax has been moderate at mostly 17-19c delivered Los Angeles, with few lots of good quality wax high as 21c per lb.

Imperial Valley—Warm weather is bringing honey plants up earlier than usual and bees are working on flax, early melons, arrow-weed and some wild flowers. Considerable pollen has been gathered by bees but little surplus honey. Very little feeding has been necessary. In colonies with ample stores broodrearing is well advanced, some colonies having 4-5 frames of brood, except in colonies that were partially poisoned. Inquiries for Light Amber to Extra Light Amber Alfalfa have been reported, but usually at a price lower than beekeepers are willing to accept. Very few sales reported at $4.50-4.65 per case of 120 lbs., f.o.b. Imperial Valley points; other sales $4.80 per case delivered Los Angeles.

Central California—Rains over most of this section toward the close of March were beneficial to growing plants though additional rains are considered necessary to insure a crop of honey from sage and buckwheat. Bees are gathering nectar actively from eucalyptus, a few early oranges, various fruit blooms, and such wild flowers as alfilaria, mustard, fiddleneck, and manzanita. Prospects for an Orange flow are good and many commercial beekeepers are moving their colonies to orange locations, though others are moving them to mountain locations. Half of hese colonies appear to be in good condition. The present outlook is for an early and heavy bloom on the oranges in Tulare County. Some swarming has already started. Supplies of honey in the beekeepers' hands are relatively light though frequent small lots are being offered as the new season approaches. The lighter grades of honey are scarce, though most dealers are well supplied with Amber and Light Amber honey. The chief interest at the present time is in the prospective crop of Orange and Sage honey. Sales by beekeepers in ton lots or more, per lb., delivered Bay Cities—Cotton-Alfalfa, Light Amber to Extra Light Amber 4¼-4½c, some 4¾c; Light Amber Bean 4½c; Extra Light Amber to White Sage $6.50 per case of 120 lbs.; delivered Interior Valley points—Light Amber Cotton 3½c per lb., cans returned, Amber Wild Flowers 3¼c per lb., cans returned; few sales Amber baking honey 3½c; Light Amber Alfalfa $5.00-5.20 per case of 120 lbs.

Northern California—Heavy rains have been general over the entire section, with rivers at flood stage and some 200,000 acres reported flooded. How this has affected beekeepers and bee hives is uncertain. A revised estimate by the California State Department of Agriculture indicates that in the previous floods losses of bees totaled 4,600 colonies, and that 30 percent of the equipment necessary to maintain them was also washed away.

SUMMARY—East of the Continental Divide temperatures have been unseasonably low; but west of the Divide the weather was moderately to unseasonably warm. The cold weather in the East has further retarded bee activities and bees have been kept in the hives over much of the White Clover Belt. The condition of many of the colonies throughout this area is becoming more precarious and winter losses in some yards in New York, Ohio, Indiana, and Illinois have already been reported in excess of 50 percent, with many beekeepers

TOO LATE TO CLASSIFY

SELLING two apiaries State inspected bees May 15 to 30. Four-frame extractor, extra supers. A. N. Durrant, Sharonville, Ohio.

FOR SALE—Fine clover honey. John Sueper, Jewell, Iowa.

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who have not examined their bees as yet, apprehensive of their condition. In the western part of the country, where the winter has been relatively less severe than further east, winter losses are reported as only normal or less. Even where losses have been heavy it does not appear that orders for package bees will be numerous because of the depressed honey market. This is confirmed by reports from the South indicating that orders for both package bees and queens have so far been light with most queen rearers and package bee men. New honey is coming in lightly in the southern tier of States, though little surplus has so far been secured. New crop Eucalyptus honey is being sold in Southern California, and new Orange nectar is beginning to come into the hives. Where bees can fly, they have brought in pollen from early flowering trees and shrubs, and broodrearing is well under way over most of the country. Moisture conditions appear to have improved during the past few weeks in most important honey-producing sections.

Demand for large lots of honey continues light and even sales of small lots to local markets is rather slow, though perhaps better than early in the year. One bright spot in the marketing picture is the continued interest on the part of Canadian buyers, and the recent movement of additional cars of honey to several Canadian points. It is understood that this honey is being used to take the place of Canadian honey which has been exported. With prospects good for the coming crop in the Far West, beekeepers who still retain old crop honey appear to be desirous of disposing of it before new crop honey is available, and there has been a slight weakening of the market tone for this season. Stocks of honey are rarely heavy anywhere except locally in parts of the Mountain States and the Clover Belt, and beekeepers seem confident that stocks will be light before new crop honey comes on the market.

Monthly Report of Honey Producers

Early in April we sent the following questions to honey producers: 1. What is your estimate, revised to date, of the amount of last year's honey crop not yet sold in your locality? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey per pound? (b) comb honey,, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey; fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 6. What is the condition of the honey plants at this time in your locality, as compared with the average? Give answer in per cent. 7. What is the present condition of the colonies, as compared with normal, considering the number and age of the bees and the supply of stores? Give answer in per cent. 8. What is the per cent of winter and spring loss to date (if any) in your locality? The answers returned are tabulated as follows:

State. Name.	1. 1939 carry-over.	2. Large lots. Ex.	2. Large lots. Comb.	3. To Grocers. Ex.	3. To Grocers. Cb.	4. To Consumers. Ex.	4. To Consumers. Comb.	5. Movement.	6. Cond. honey plants	7. Cond. of colo.	8. Per cent loss.
B. C. (A. W. Finlay)								Fair	100	100	3
S-Calif. (L. L. Andrews)	1							Fair	85	100	10
C-Calif. (Davis Bros.)	5					.50	.20	Slow	100	85	2
SE-Colo. (Otis E. Adcock)	30			.40		.49	.18	Slow	75	75	5
E-Conn. (Allen Latham)	5			.75	5.00	1.00	.28	Fair		100	4
S-Fla. (C. C. Cook)		.04½		.35		.50		Slow	100	100	10
C-Fla. (Harry Hewitt)	0			.40		.52		Fair	100	100	0
SE-Ga. (J. J. Wilder)	2	.05½		.50		.60		Fair	100	80	12
S-Ills. (Carl E. Killion)	20	.07		.45	3.25	.60	.20	Fair	75	75	35
NC-Ind. (T. C. Johnson)	15			.50	3.00	.60	.16	Fair	75	90	10
NW-Ind. (E. S. Miller)	5			.50	3.00	.65	.15	Slow	60	100	5
W-Iowa (E. G. Brown)	0					.49		Rapid	80	80	20
S-La. (E. C. Davis)	5			.35		.50		Fair	75	100	
N-Maine (O. B. Griffin)	0				4.75		.28	Slow	100	100	
C-Md. (S. G. Crocker)	5			.60	3.00	.75	.20	Slow			12
E-Mich. (L. S. Griggs)	5	.05½		.40		.59	.19	Fair	100		
S-Mich. (Floyd Markham)	25	.06				.65	.15	Fair	50	80	47
C-Mich. (E. D. Townsend)		.05½						Slow	80	100	
E-Minn. (Floyd W. Ray)		.04½		.35		.47		Fair	90	100	
W-Minn. (B. L. Morehouse)	20	.04¾		.35	2.40	.39	.12	Slow	70	80	5
C-Nebr. (J. H. Wagner)	20	.05½	2.35	.35	2.80	.39	.15	Slow	60	90	5
W-Nev. (Mrs. E. G. Norton)		.03½						Slow	75	75	
W-Nev. (Geo. G. Schweis)	15					.45	.20	Slow	100	100	
NW-N. Y. (Geo. B. Howe)		.06		.50		.60	.20	Fair	90		
C-N. Y. (F. W. Lesser)	12	.06½		.48		.60		Fair	75	75	10
NC-Okla. (C. F. Stiles)	0			.43		.65	.18	Fair	70	75	15
W-Ore. (H. A. Scullen)	10			.38		.50		Slow	100	90	5
C-Penn. (Harry Beaver)	30	.04½		.50		.60		Slow	70	60	20
SE-Penn. (D. C. Gilham)	25			.70	4.25	1.00	.25	Fair	90	90	15
W-S. C. (E. S. Prevost)	1					.16		Fair	110	80	10
NE-S. D. (L. A. Syverud)	10			.37	2.75	.43	.17	Fair	60		
SE-S. D. (J. F. Norgren)	15	.05		.40	2.80	.49	.15	Fair	85	90	20
C-Tenn. (J. M. Buchanan)	0					.75		Slow	90	90	
E-Tenn. (W. L. Walling)	0					1.00		Slow	90	90	0
C-Texas (T. A. Bowden)				.45		.55		Fair	100	100	1
S-Texas (H. B. Parks)	0			.48		.60		Fair	80	85	7
N-Utah (W. H. Hendricks)	10			.43		.49		Fair	100	100	6
N-W. Va. (W. C. Griffith)	0					.50	.19	Slow	75	70	5
SE-Wisc. (N. E. France)						.45	.18	Fair	100	80	5

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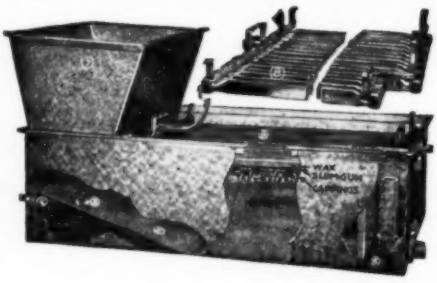

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(Continued on page 334)

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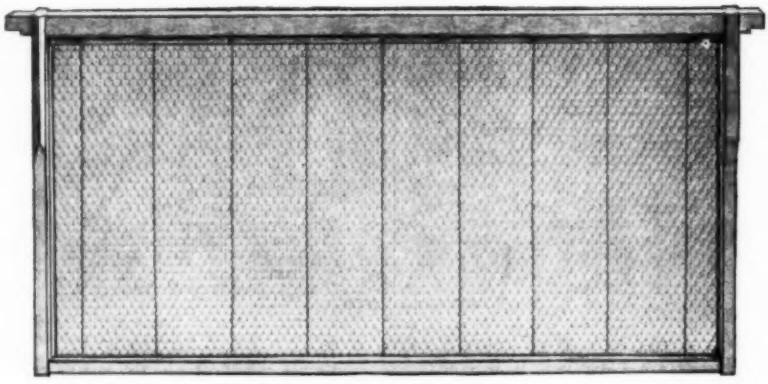
Kelley's Wired Brood



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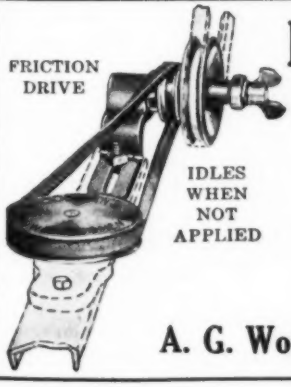

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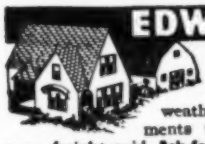

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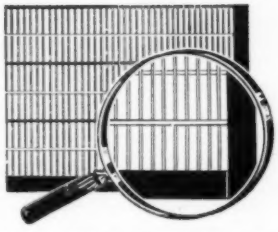

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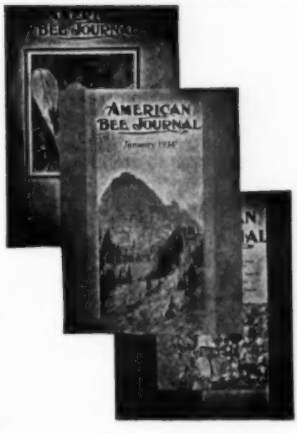

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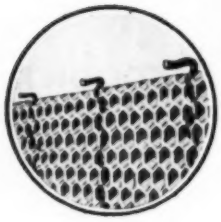

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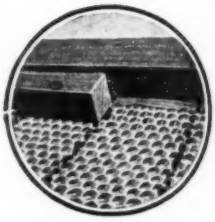
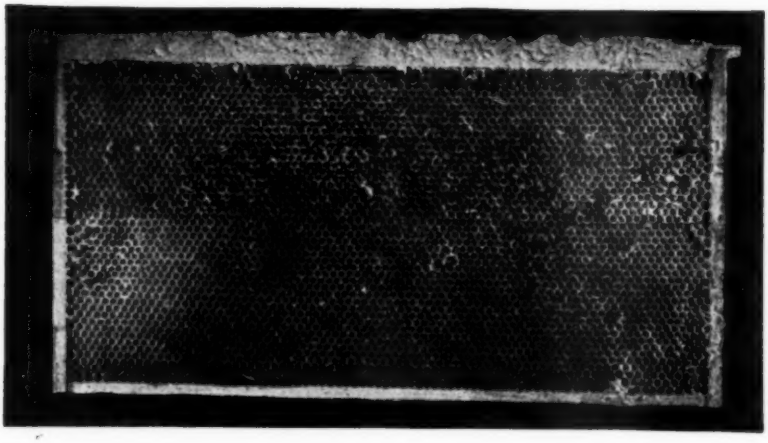
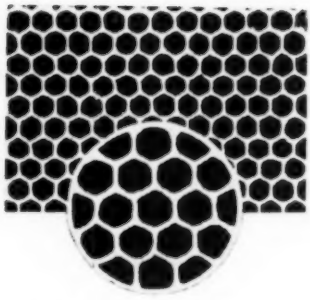




That Do So Much



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Vol. 68
No. 5

Gleanings
in Bee Culture

May
1940

Supersedure in Comb Honey Production

By W. A. Rowland

For some years now an added interest with us in the production of comb honey, which has always constituted the major portion of our annual harvest, has been to work out some method to prevent swarming and ensure a maximum return per colony, which would be applicable to our local conditions and, while involving a minimum expenditure of labor and equipment, could be depended on with some certainty. That we have not succeeded in completely reaching that objective is admitted with regret. Nevertheless much additional knowledge has been obtained, though at the cost of considerable labor and expense, which will encourage a continuance of the work another season.

A detailed description of the different plans tried, together with results would fill many pages. However, mention might be briefly made of several described and advocated in different journals and recently used by us, all of which proved unsatisfactory with conditions here where the honey flow lasts annually about three weeks. Unless we get the honey in the sections in those three weeks we are "out of luck".

A plan attractively written up in one journal a few years ago by a contributor in the Canadian West as being successful in every way called for a division of the double-chamber colony at the commencement of the honey flow as follows: "On the brood chamber (with the queen) left on the bottom-board was placed a super of sections; then an excluder and the second and queenless brood chamber set on the excluder; eight days later all cells in the top story were thoroughly removed." Theoretically, raising a considerable proportion of the nurse bees to the top would retard swarming. The bees emerging in the top would augment the strength of the colony, which would not happen if, as is usually done, the colony were reduced to one brood chamber and a comb super.

We were interested in trying the scheme with a few colonies last year, but with us it was a flat failure. True, there was no swarming—nary a case of it. Neither did we get any comb honey. We overlooked the fact that bees will not work in sections as long as empty cells are available in the hive. The amount of empty comb in the top brood chamber was daily increasing due to the emergence of young bees, with the result that the sections were ignored, the bees travelling up through the comb super and the excluder and filling the vacated cells in the top brood chamber. At the end of the harvest the upper brood chamber was filled solid with the finest of white honey and little or no work at all done in the sections. The only conditions under which the method would be successful, in our opinion, would be those where annual colony production would average very high—200 pounds or more in a season. In a short season where the general average lies between 50 to 100 pounds, the plan is useless.

Rearing New Queen in Parent Colony

A number of methods whereby a new queen is raised in and mated from the producing hive, have, of recent years received mention in some journals. Our experience has been this,—after dequeening and grafting cells in these colonies they invariably swarmed. And no whit

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better is the scheme of cutting out all swarm cells after removing the queen—if she has not already removed herself by swarming—and allowing but one cell to mature, since queenless bees do not as a rule draw out sections but deposit the incoming honey in the brood chamber as the cells there are made available by emerging bees; and by the time the young queen is laying the harvest is over, with no sections finished and with the brood chamber completely filled with honey, some of which the bees will raise into the sections later.

We have found that the condition most favorable to the prevention of swarming and the consequent production of comb honey is that in which the undivided colony, by some means, is in possession of a new young laying queen right at the commencement of the honey flow—a queen which was raised right in that colony and we have devoted much thought and effort to some method of effecting this at will. In the winter of 1938 we worked out a plan which not only promised to be successful but required no extra bottom-boards or covers or costly equipment, the only additional requirement being a specially constructed "escape" board. This board had in the centre a hole 3" by 2". On the under side three wooden strips ⅜" thick were nailed around the hole in the form of a triangle, an opening ⅜" wide being left at one corner, and over the strips was nailed wire screening. Bees could go down but not return; at the same time the warmth and hive odor from the lower chamber would pass through into the upper. They were used in attempting supersedure under two different sets of conditions as follows:

Condition No. 1. Swarming Colony. While the swarm was out the hive was carried ten or fifteen feet away and on the old stand was placed a new hive containing empty combs or foundation, into which the bees returned, the clipped queen caught in the meantime being run in with them. Four or five days later the cover was removed from the hive containing the swarm. On it was placed the escape board having a piece of wire screening laid over the 3" by 2" hole to prevent bees intermingling; then the old brood chamber carried aside some days previously, from which the field bees had gone back to the old stand and containing cells, was placed on top of the escape board. A 1" hole was bored in the side of the top chamber. In about two weeks' time a young queen was laying in the upper chamber which was becoming very populous from the brood emerging, and the bees of the upper chamber were very busy working out and in the 1" hole while in the lower chamber the old queen had several frames filled with brood. With the least possible disturbance the position of the two chambers was now reversed. The top story was set on the bottom-board, on that a super of sections, then the escape board with the loose piece of wire screening previously laid over the hole removed, and on top of all the swarm after removing the old queen. One wondered if there would be any fighting when returning bees entered the chamber containing the new queen; in no instance, however, did this happen; as the days went on the bees in the top story worked down through the escape and after the emergence of all brood the empty top brood chamber was later on set on the colony to become a food chamber for winter after removal of the sections. There was no swarming and excellent results from the standpoint of production.

Condition No. 2. Forced Supersedure. About two weeks before the expected flow each two-story colony was divided by placing between them the special escape-board previously described and having a piece of wire screening laid over the hole. The queen, of course, was left in the bottom chamber; a 1" hole was bored in the side of the upper story into which a capped grafted cell was placed, a supply of these having been previously arranged and raised in a special colony. There was plenty of room and stores in this upper chamber; the field bees would all return to the lower, it would be inhabited by young bees only; the odor and warmth would ascend through the screening from below and by the time the young queen was laying, a lot of the brood would have emerged, thus giving her an ideal start. At this point the procedure would be the same as described in condition No. 1, viz., the reversal of the two chambers resulting in the chamber with the new queen now on the bottom-board, next the comb super, and on that the bee-escape board and on top the original brood chamber with the old queen removed.

The Unexpected Happened

Now, here is the surprising and equally disappointing thing that happened—and not in a single case but in the case of every one of a dozen colonies set apart to try this out: A few days after the emergence of the queen from the cell every one of these colonies swarmed! These swarms were not large; they always clustered, the same as large prime swarms with laying queens, until they were hived; and when hived each swarm contained a young, unmated queen!

Now, why did these virgin queens swarm out of the top chambers under condition No. 2 and not under condition No. 1, when they had plenty of stores, room, and shade and there was no intermingling with the old colony below due to the hole in the escape-board being covered with the wire screening? That is something we have not been able to fathom so far. At any rate, the plan for us and under our conditions here this year proved a failure in every case of forced supersedure so tried. We have come to the conclusion that a more promising method would be to divide the colony, setting the queenless chamber on a bottom-board next the parent colony and giving it a grafted cell; then when the new queen is laying place on her brood chamber the comb honey super, over that the escape-board, and on top the parent colony after removing the old queen, thus keeping the colony intact—all of which means something to try out another year.

Leaside, Ontario.

[Mr. Rowland does not say if the experiments under conditions No. 1 and No. 2 were carried on at identically the same time in the same yard. If they were not, different conditions may have been responsible for the different results. It seems possible that the difference between the condition of the top brood chambers of No. 1 and No. 2 may have had some bearing on results. The No. 1 brood chambers from which swarms issued were not exactly in the same condition, when placed on top, as were the top brood chambers of the divided two-story colonies in No. 2. If all cells were destroyed and there was no brood from which to rear natural cells in the No. 2 brood chambers when ripe cells were given, we cannot understand why the virgins would leave with small swarms, permanently, as prime swarms would do. The top brood chambers would then be hopelessly queenless and such a condition does not occur normally. Possibly some of our readers can enlighten us.—Editor.]

Bees and Bears in Alabama

This bear was killed just before daylight by Dan Smith, part owner of the Calvert Apiaries. The bear seemed to visit the bee yard just before day to get his daily supply of honey. This was in Mobile County on the Tombigbee River just below Mt. Vernon. This bear weighed 240 pounds and is known as the "Big Black Bear". Bears are very destructive to bee yards as they eat all the honey and destroy the equipment. This Department has taken this matter up with the U. S. Bee Culture Laboratory in Davis, California, as the California beekeepers have had considerable trouble with bears destroying the apiaries and the Bee Culture Laboratory has been working to find some way to prevent destruction of the bee yards.

The only available place a bee can sting a bear is on his nose as his fur is too heavy for the bee sting to reach him. In order for the bear to overcome this before he goes into a bee hive, he will hunt for a pine tree and rub his nose in the resin and then into the dirt until it is thoroughly coated and then he is ready to rob his bees as they cannot sting him at all when this is done.—Thos. Atchison, Montgomery, Alabama.

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Caught in the act in my office, November, 1939.

Orchard Pollination in New York

By George H. Rea
Extension Bee Specialist for
New York State.

Three means of supplying bees for the orchards in this state have been tried with varying degrees of success. One of these, the five-pound orchard package, shipped directly from the South to the fruit grower, never did well and after many trials was abandoned. Two fundamental factors were lacking n this method of supplying bees. The colony was too small and the weather conditions seldom suitable for effective bee flight from so small a colony. Other things went wrong with the package. One fruit grower summed it all up when he told it this way. "You place the package down in the orchard, open up the entrance and then run like ——. After that, if the bees don't starve to death, if they don't swarm out and leave, or if the weather is not too cold and cloudy, they may do some work."

Another method is for the fruit grower to own and operate his own bees. Some fruit growers have succeeded as beekeepers but a large majority of them do not know how to keep bees, are not willing to learn, are too busy to give their bees proper attention at the right time, or find their investment wiped out by the ravages of AFB or dusting or spray poison. Although efficient and effective apiary inspection has practically eradicated the disease, the other difficulties are too great for the average fruit grower, and this kind of beekeeping has waned rapidly in the past few years.

The third plan, that of renting bees from beekeepers, has been the most efficient and successful. Both the fruit growers and the beekeepers find some difficult problems involved in this plan. The beekeepers find it necessary to practice the best of wintering methods in order to have colonies stronger in early May than is necessary, at that time, for colonies to be used only for clover honey production about one month later. The bees must be disease free and must comply to the rigid inspection regulations of the state in order to be moved. Moving into the orchards and out again must be done on short notice, which in many cases involves doing the work after nightfall and in inclement weather. Because it is necessary for a wide distribution of the bees, orchards in which clean cultivation is practiced are often a sea of mud, ankle deep or worse. It takes no stretch of imagination to realize the difficulties involved in distributing colonies of bees after dark, in the rain and mud, with branches touching from tree to tree and perhaps only two or three feet above the ground. Under the most favorable conditions distributing bees in the average low-growing orchard with wide-spread branches is a trying task and involves much hard labor.

15000 Colonies Used in New York in 1939

Fifteen thousand colonies is a lot of bees, but that was approximately the number used for orchard pollination in New York State in 1939. While part of these colonies were owned by the fruit growers, the vast majority were rented from beekeepers. Whether the number of colonies rented for this purpose will increase in future years will depend largely on the condition of the fruit markets. While there are many orchards which would produce more apples, pears, sweet and sour cherries, prunes and other fruits, if more bees were present, it is not altogether a question of producing more fruit. The fruit grower who fails to make a profit on the crop is not likely to invest as much in bees as would be the case if fruit prices were higher. Some fruit growers have already indicated that they may not rent as many bees as usual this spring.

On the other side, some beekeepers have given up the business of supplying bees for the orchards, while others have expressed dissatisfaction because rentals are often difficult to collect and profits, if any, are hard to make at the present low rental prices, even when all conditions are favorable for the work. In addition, severe losses are sometimes experienced because of spray or dust poison or damage to colonies in moving. Colonies which have been used in the orchards seldom produce as much honey from the clover flow as do other colonies in the same apiaries. This is itself an important source of loss.

Because of increasing dissatisfaction, and in response to requests from both fruit growers and beekeepers for more information on the problems incident to supplying bees for the orchards, a recent effort has been made to secure data which, together with that of other workers in past years, might lead toward some practical suggestions beneficial to both beekeeper and fruit grower.

In the spring and summer of 1938 and again in 1939 orchards were visited where bees were present for pollination in four counties, and several days were spent at each visit. Hundreds of colonies were examined while the trees were in blossom and notes made regarding the number of colonies per acre of trees, the strength of colonies, their distribution, and where placed in relation to sunshine and wind protection. Notes were made also on the intensity of the blossom, the varieties of trees, and the nature of the weather. Later in the summer a second visit was made to determine the set of fruit. This type of work is being followed in the same counties this spring, and requests for this service have come from other fruit-growing areas. This work has resulted in a statement of the problems and some suggestions as to their solutions.

These bees were too far from the trees. The apple crop was heavy on the trees near the bees but almost a failure on the opposite side of the orchard.

These packed colonies wintered well while the unpacked colonies were not strong enough to work effectively while the apple trees were in blossom.

These two-story colonies will be strong when needed in the orchard.

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Strong Colonies Necessary

Honeybees fly largely in response to temperature and sunlight and the instinct to collect nectar and pollen when the flowers are in the right condition. In the usual weather conditions during fruit bloom, the minimum colony should cover not less than six combs at 50 degrees Fahrenheit. Stronger colonies may do considerable work at temperatures below 50 degrees Fahrenheit, while weaker colonies are not likely to fly at all. At higher temperatures the weaker colonies will fly and may be of some service. Since the weather during fruit blossom time is usually cool and often cloudy and windy, it is not wise to depend upon colonies of minimum strength unless stronger colonies are not available. Not only will the stronger colonies fly at lower temperatures, but because they have more field bees they will cover a larger area of orchard in a given time. For these reasons the stronger the colonies, the fewer number of colonies may be necessary.

How to Judge Colony Strength

Fruit growers frequently inquire how they can determine the strength of the colonies which they are about to rent or purchase. If one is properly equipped, this is a simple matter, even though one may never have handled bees, or is afraid of them.

A bee-smoker, bee-veil, gloves and hive-tool with instructions for using may be purchased at small cost from any manufacturer of beekeepers' supplies or their agents. To examine the bees, have the smoker lighted, using for fuel cotton rags, burlap, or partly decayed wood, and have a good volume of smoke available. With the veil over the face and the hands protected by the gloves, slowly lift the cover from the hive, blow in some smoke to quiet the bees, and observe how many of the combs the bees cover. At 50 degrees F. or below, most of the bees, even in strong colonies, will be in the hive, and the actual number of combs which they occupy can be readily determined. When temperatures are high enough so that the field bees are out, the number of frames containing brood should be determined. For example, if four combs contain brood, two more combs or six combs would be covered with bees when the field bees are all in the hive. A colony having eight or more combs containing brood is a strong colony.

Frequent disagreements arise between fruit growers and beekeepers as to the relative value of and the rental price to be paid for certain colonies. While it is difficult to set workable standards for colony strength in relation to the rental price which could be adhered to strictly, yet because there is wide diversity in rental prices, and because there seems to be no certainty as to the strength of the colonies which may be delivered to the orchards, some suggestions may be helpful.

It is suggested that three grades of colonies be arranged. First: Extra strong colonies containing ten or more combs of brood. Second: Strong colonies containing seven to nine combs of brood. Third: Medium colonies containing four to six combs of brood. It is understood that a comb which is more than one-half full of brood is usually recognized by beekeepers as the average. Two or more combs less than one-half full of brood may be estimated accordingly.

Bees wintered this way sometimes hang out in warm weather before it is safe to remove the packing. Such colonies are valuable for pollination.

It is suggested, also, that a mark designating the grade of the colony or the number of combs of brood which it contains at the time of delivery to the orchard be placed on the outside of the hive.

Because it is unusual for a colony in the one-story, ten-frame hive to contain more than eight combs of brood, all of the colonies in the first grade and at least part of those in the second grade must be in two-story hives. It is obvious that the stronger colonies have far greater value in pollination than the weaker colonies, but at the same time fewer strong colonies are required per acre of blossoms.

Number of Colonies per Acre of Orchard

A previous recommendation of one colony for each acre of orchard was based upon one-story colonies of fair strength. This recommendation still holds, but it is evident that if strong colonies having eight or more combs of brood are used, fewer colonies may be necessary. Since provisions should be made for efficient pollination in the poorest bee flight conditions, it is not safe to reduce the number of colonies below a certain minimum, and yet it seems that if the bees in the colonies cover more than eight combs of brood, about one-half to two-thirds as many colonies are necessary when compared with colonies having six combs of brood.

An ideal situation for bees during fruit bloom. Protected from wind and yet in sunshine. Permanently located in the orchard but in great danger of spray poison.

Location and Distribution of Colonies

As far as is possible the hives should be placed where the sun will shine on them and with the entrances toward the East or South. The heat provided by the sun and the additional sunlight induces the bees to fly and work on the blossoms at times when colonies in the shade will not be active. This is especially important since even in hours of sunshine the temperatures are often low and the bees should have all the advantage possible. It is a mistake to place the bees under the trees if sunny locations are available. A windbreak such as a bunch of weeds or brush will help also. An additional help is to set the hive on a piece of black roofing paper. This is an aid to the bees which may fall on the ground because of cold or exhaustion, and as a source of additional warmth when the sun shines.

The distribution of the colonies is highly important, especially in temperatures too low for long bee flights. Observations in the orchards have shown that in several cases where the bees were all in one location the set of fruit was heavy near the bees and light or almost a failure several rows of trees distant from the bees. In other cases where the bees were widely and evenly distributed, the fruit set was consistent with the distribution of the bees. Small groups of colonies are not as desirable as single colonies evenly distributed all over the orchard.

Killing Bees with Arsenicals

Beekeeping within the orchard areas has greatly declined in the past few years and at the same time renting bees from beekeepers outside of the orchard areas has greatly increased. In some cases the demand for bees has not been met. This is mostly due to the fact that poisonous sprays have killed large numbers of colonies, and that in some localities

(Continued on page 330)

XUM

Mating Flights of Queen Bees

By Dr. E. Oertel
U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine[1]

Introduction

Beekeepers are naturally much concerned about the weather conditions that prevail on days when virgin queen are ready to take mating flights. Huber (1814), the famous Swiss investigator of bee behavior, noted as early as 1787 the flights of virgin queens and their return to the hive with evidences of mating. There are few reports in beekeeping literature of queens being seen with the drone organs attached, and few detailed observations on the flight of either virgin queens or drones.

Various observers in the United States (Alley 1883, Benton 1899, Phillips 1916, Parks and Alex 1925, Root and Root 1935) state that virgin queens mate when from 5 to 8 days of age. In England, according to Sladen (1913), virgin queens usually mate 9 or 10 days after emergence. Perret-Maisonneuve (1926) says that the queens are supposed to mate on the third to the fifth day, but that in France he has observed many matings on the seventh day. Zander (1933) says that in Germany the queens usually mate within 14 days after emrgence from the queen cell.

It is generally believed that the queen bee mates only once in her lifetime. As early as 1788, however, Huber (1814) reported that he observed two queens that mated twice. Nolan (1932) gives a number of references to observations of queens that had mated twice, and he cites an instance of an Abyssinian queen bee mating as often as four times. Risga (1931), in Latvia, studied the activities of virgin queen bees, using a metal apparatus across the entrance of the hive to catch queens upon leaving or entering. He observed "that most of them leave the hive for their wedding trip only once. But a great many go out also for a second time. * * * The queen may leave the hive also for a third time but that happens comparatively seldom. * * * But we have never noticed by the aid of the signs of mating, that a young queen had mated twice". Risga apparently did not actually see many queens return from their flights. The queen trap that he used allowed the queens to fly, but prevented them from re-entering the hive until the trap was removed.

Dr. E. Oertel at his desk.

To obtain additional information concerning the flights of virgin queens, observations were made at Baton Rouge, La., in 1937 and 1938.

Method

Small guards of zinc were made to fit over the flight entrance of mating hives. These guards allowed the worker bees to fly freely, but the queen could leave or enter the hive only when the guard was removed. Whenever a queen was seen at the hive entrance, the guard was removed and she was allowed to fly. Generally it is easy to determine whether a queen has mated, for the drone sex organs can be seen protruding from her vagina. If a queen returned without signs of mating, the hive entrance was kept under observation, and if she again appeared at the hive entrance she was again allowed to fly.

In 1937, between May 14 and June 16, data on the flights of virgin queens and initial egg laying were obtained for 20 queens. Virgin queens were observed at the hive entrance from 6 to 9 days after emergence, and the mating flights took place 7 to 10 days after emergence. Mating occurred on the first to third flight, and egg laying began from 2 to 4 days later. Two queens flew for 2 or

[1]A contribution from the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, in cooperation with the University of Louisiana.

3 minutes on the day following their mating, but they returned without signs of another mating and later began egg laying. Virgin queens frequently walked out of the hive entrance, but did not try to fly when the guards were removed. In such cases the guards were replaced as soon as the queen re-entered the hive.

In 1938, from June 13 to September 2, data were obtained on 36 queens. The queens were observed at the hive entrance from 3 to 11 days after emergence, mating took place on the first to fourth flight, from 6 to 13 days after emergence, and egg laying began from 1 to 8 days after mating. Four queens were seen at the hive entrance the day after they were first mated, and when allowed to fly again they returned with part of the drone organs showing. It is possible that more mated queens would have flown again if given the opportunity, but previously not much attention had been given to the guards after the queens' return with evidence of mating.

The data for 1937 and 1938 (Table 1) show that most of the queens were first seen at the hive entrance on the seventh and eighth days after emergence, and that they mated 8 or 9 days after emergence, and that most of the egg laying began from 2 to 4 days after mating. These figures show further that these virgin queens tended to mate later than the time given by the American investigators quoted, but slightly earlier than the time given by Sladen for England. The mating apiary was in a shady location under young oak and pine trees, but the sun shone on all the hives during a part of the day. The presence of the guards may have postponed the mating flights. Four virgins in one lot that emerged July 11 were not allowed to fly until July 26; of these, three were laying on July 31 and one disappeared. These queens were at least 15 days old when mated. Data on these four queens are not included in the table. The queens were not artificially marked, but it is doubtful that lack of definite identification has introduced errors. Much variation in time of mating and beginning of egg laying is apparent, but no data were obtained to account for this.

The duration of the non-mating flights ranged from 2 to 30 minutes, that of mating flights from 5 to 30 minutes. Virgin queens frequently mated on the first flight, and they seldom flew more than three times; 18 queens mated on the first flight, 25 on the second, 9 on the third, and 4 on the fourth flight. Two queens made two short flights on the day after the first mating, but they did not show signs of another mating. Queens were never seen at the hive entrance in the forenoon. All the flights occurred in the afternoon, most of them between 2 and 4 o'clock. The earliest mating flight occurred from 1:23 to 1:45 and the latest from 4:15 to 4:35 p. m.

From September 13 to 19, 1938, a few data were obtained on the flight of drones. Counts were made of outgoing and incoming drones from two colonies during 5-minute intervals. There was practically no drone flight before 12:30 p. m., the maximum flight was from 2 to 3:30, and there

(Continued on page 333)

Table 1—Mating and egg-laying activities of queen bees, Baton Rouge, La., 1937 and 1938.

Days after emergence that queen was seen at hive entrance.	Number of queens mated on indicated days after emergence[1]							
	6 days	7 days	8 days	9 days	10 days	11 days	12 days	13 days	Total
3	1								1
4	2					1			3
5	2		3						5
6	1	2	1	1	1	1			7
7		8	4	5	2				19
8			8	7	3				18
9				3				1	4
10					1	1			2
11								1	1
Total	6	10	16	16	7	3		2	60

	Number of queens laying first eggs on indicated days after mating[2]							
	1 day	2 days	3 days	4 days	5 days	6 days	7 days	8 days
	1	11	21	13	5	2	0	1

[1]Four queens mated twice in 1938, and they are included in the table on 2 successive days.

[2]Two queens disappeared after returning to the hive following the mating flight, before egg laying began.

XUM

Fig. 1.

More about Central Packing of Honey in Ontario

By Morley Pettit

(Continued from April)

A physician was once asked by a beekeeper, "Why do you prescribe corn syrup for use in preparing food for infants, when honey is Nature's own sweet and many young wives of beekeepers are raising their babies on honey?" The physician laconically replied, "Which honey, tupelo or smartweed, or buckwheat, or tyty, or what?"

A housewife said to the manager of the food store that she patronized, "What's wrong with John Doe's honey this time? The can I got last year was fine but this last one is rotten. It looks and tastes like it had brown sugar in it." "He tells me his bees didn't do very well this year," the manager explained, "and the honey is different, but it's pure and the best he has now." "I'll say its different," said the angry lady, "and mind you don't send me any more honey if that's the best you can do."

"John," said the store manager to the beekeeper next time he called, "we can't sell that last honey you brought in. Why don't you send it to the Co-operative and keep your best honey for your friends around home? Henceforth we're handling well-known brands that we can depend on to be uniform." "As a matter of fact," said John, "I did try them with a sample but they were going to grade it down more than I thought they should."

There are as many different varieties of honey as of nectar-bearing flowers and each has its own chemical and physical properties as well as flavor and aroma. The proportion of these varieties of flowers bearing nectar changes with weather and other conditions from year to year so that a beekeeper's product in any one locality is never two years quite the same. This makes it almost impossible for a smaller beekeeper to pack uniform honey under his own name.

By personal contact with his customers he may overcome this handicap but when his honey leaves home its lack of uniformity will more than likely cause its downfall in the war of competing foods.

One producer with a large number of apiaries might, by proper blending, put up a fairly uniform pack. Several large producers covering a wider area could accomplish this much better by clubbing together and pooling their honey for blending, packing and aggressive sale. As dry and wet weather conditions switch back and forth over the territory the assembling and classifying of honey at a central point is likely to produce about the same quantities of the different varieties each year.

Fig. 2.

Honey Classified as to Color and Flavor

At the Ontario Honey Producers' Co-operative packing plant the honey is brought in from as far as two hundred miles in different directions. It is classified on the receiving floor according to color, flavor, etc., and stored away in different groups under the various class names. The rules determining the classes are not allowed to change from year to year. That is, the standards of color and flavor are fixed. Each brand of honey packed and sold by this Company must consist of certain proportions of certain class groups of honey determined by a formula prescribed to the plant manager by the general manager. Every batch is filled by prescription.

In the illustrations, Fig. 1, shows the receiving floor with a quantity of honey in square sixty-pound tins as they come in from producers and as they are shipped for export. It will be noted that wooden boxes are never used on sixties in Canada. The cardboard carton holding one can is quite

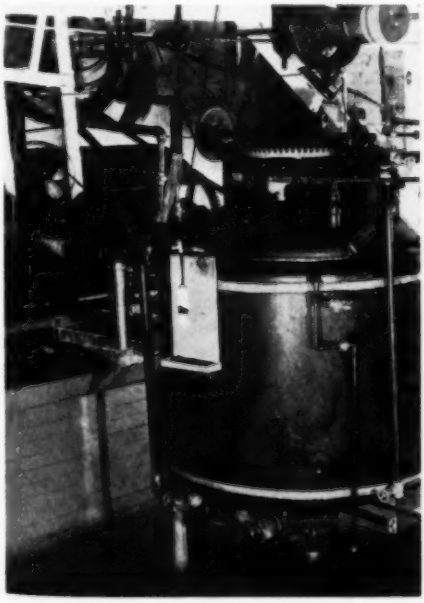


Fig. 3.

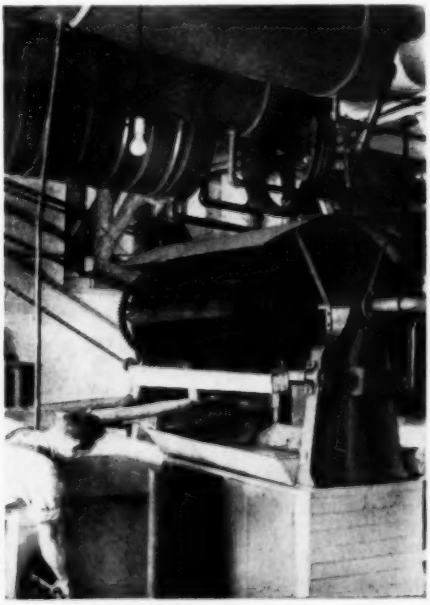


Fig. 4.

acceptable and for ocean shipment this is wired for extra strength. Most of the bulk containers supplied to producers for shipping in to the plant are round steel drums holding 60 pounds. They can be washed and refilled many times oftener than can tin cans and are even being asked for by foreign buyers.

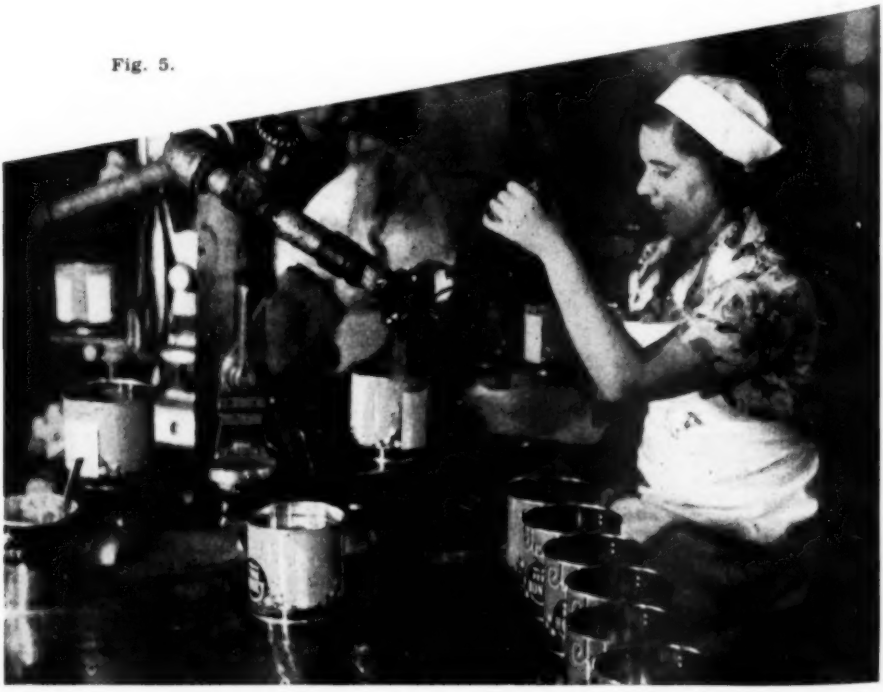
Fig. 2 is the oven where the honey gets its first heating. Steam pipes can be seen along the sides, and at the back is an air circulator with fan to bring the hot air down to the floor. The solid honey in drums is left in the oven just long enough to soften and loosen it from the sides. The drums are then removed and dumped in a large trough with screw along the bottom to force the mushy honey to a pump which elevates it to the steam-jacketed kettle shown in Fig. 3. This kettle is porcelain lined and air-tight. The heavy gear wheel on its top drives an agitator within the kettle that keeps the honey evenly mixed until it reaches the desired temperature. At that point the attendant turns off the steam, stops the agitator and turns compressed air in on top of the honey. This forces it out through the pipe seen coming up from the bottom of the kettle, through a special strainer and up to storage tanks suspended from the ceiling as shown in Fig. 4.

Heating Prevents Fermentation

It takes only a short time to empty the kettle to these three elevated store tanks and then the kettle is ready to start heating another six thousand pounds of honey. The honey has now been heated so there is no further danger of fermentation if left long in storage. It has been blended to formula prescribed for whatever brand it is to be. It is liquid and hot, too hot to be allowed to take its time cooling.

The next step in the process is to cool it as quickly as possible and this is done by means of the cooling roll shown in the center of Fig. 4. This hollow iron roll has a stream of cold water flowing through it to make the surface very cold. It turns with its lower side immersed in a pan of hot honey fed down to it by pipes from the elevated tanks. As it turns slowly it picks up a film of honey at about 150 degrees, carries it over nearly a whole revolution and delivers it at about 75 degrees, to a place where it is scraped off into a trough plainly seen in Fig. 4. The

Fig. 5.



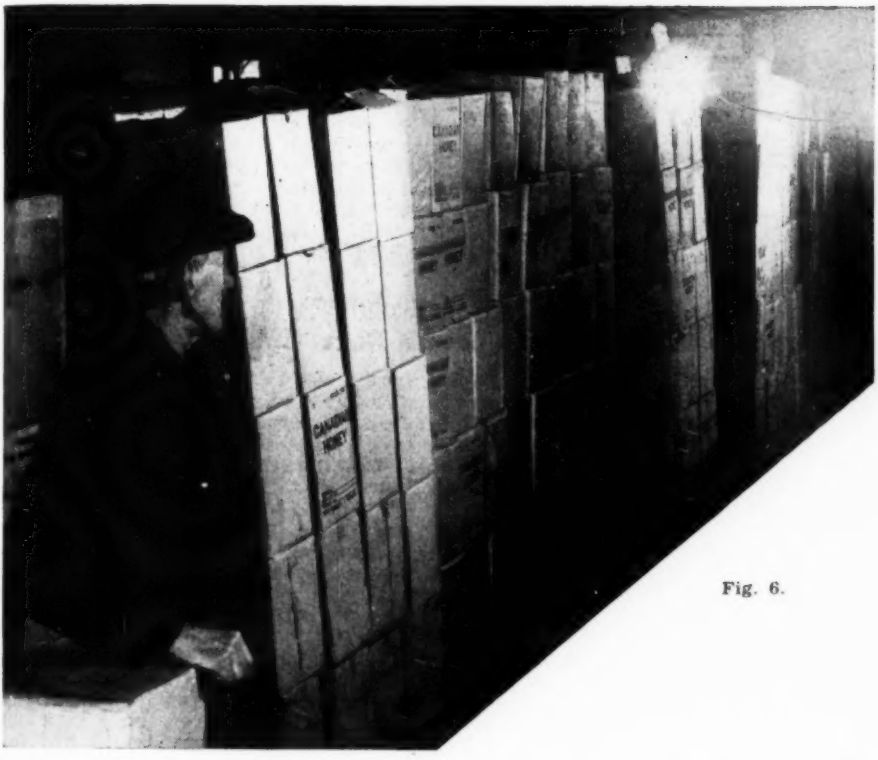


Fig. 6.

trough has pipes which convey the cooled honey to mixing vats for seeding.

The "seed" for regranulation is nothing but finely granulated honey of the same color and flavor class which has been softened by heat and ground free of lumps through a screen. Five to ten percent of this is stirred into the cooled honey in special vats. At the bottom of Fig. 4, a man is seen opening the valve which allows the seeded honey to flow down through a vertical pipe to the filling gates on the floor below.

Fig. 5, shows two of the girls in the filling room operating honey gates to fill four-pound lithographed tins with Clover Brand Honey as it flows down the standpipe from the mixing vats above. Other girls not shown place lids on these cans and press them in while others pack the cans in cartons ready for shipment.

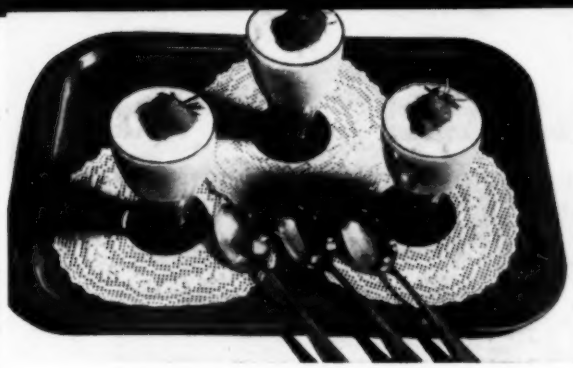
An important part of regranulation is the temperature-control room where the finally packed honey is stored for at least a week to make sure of fine even granulation. This room is heavily insulated and a refrigerating plant automatically holds it at the required temperature. It also pumps cold water to the second floor above to circulate it through the cooling roll already described.

The control room was too full for our phtographer to get a good picture but he did manage to catch John Thompson the plant manager looking over a considerable pile of packed honey waiting to "set". See Fig. 6. The photographer is W. R. Millar who is also a Toronto beekeeper.

The plant can process and pack twelve thousand pounds of honey daily and when there is a real rush they have packed an average of fifteen thousand pounds daily for weeks at a time.

I am proud to have had a great deal to do with planning and installing this first commercial plant to use the Dyce process of pasteurizing and regranulation. If starting over again there are material changes that might be made in the equipment, but it works most satisfactorily and the honey sells freely.

Tifton, Ga.



This tapioca concoction is a "honey"

For Strawberry Time

By Mrs. Benj. Nielsen

Strawberries and Honey Give a Royal Touch to Any Meal

What a joy it is to welcome back that luscious, sparkling member of the berry family! Strawberries, the advance guard of the early fruits, banish monotony from spring meals. The most commonplace meal takes on new interest when there are strawberries in the offing.

By the way, how's that strawberry patch coming along? There's nothing quite so satisfying as the thrill that comes when you finally pick the first of those deep red berries you have been shooing the birds away from; ten to one, those first ones never reach the kitchen—you decide quite unconsciously, of course, that washing is quite unnecessary—who cares about a bit of sand or grit, when that incomparable juice moistens thirsty taste buds! Umm! However, if there are enough berries and you can exercise sufficient restraint and get them into the kitchen, wash them, then drizzle them lightly with honey you will have a treat worth waiting for. Use the honey sparingly, please, it is to emphasize and enhance the fresh fruit flavor, not to mask it with cloying sweetness. A light and skilful touch, and you will wonder why you never tried it before. Then if you would have a dish to delight the eye, as well as tickle the palate, select choice, fully ripened berries, wash, hull and place large end down in a lake of cream; then drizzle lightly with Nature's finest sweet. Those glistening, ruby peaks are a temptation not to be resisted. Watch the calories, gals! Did you say that patch was doing real well? I do hope so, for you will need lots of fresh material, in the way of berries, if you try all of the treats we have in store for you this month. And they are sure repeaters!

If you must buy your berries earmarks of quality are reflected in a fresh, clean, bright appearance and a solid red color, without excess moisture or dirt. Green caps should be attached and both caps and stems should be a bright green. If the container is stained a deep red this usually means that the berries have been mashed, or are over-ripe and leaky. If shrunken and dull in appearance the berries may be over-ripe. Berries with white spots, especially on the tips, were picked too soon.

Wash strawberries just before using them and before removing the caps and stems. To prevent mashing and loss of juice rinse them carefully, a few at a time, preferably in a pan of water. The water should not fall on them with force. Lift the berries out of the water gently, rather than pouring the water off, so that sand or soil that settles to the bottom will not cling to the berries. Never allow the berries to stand in water any longer than necessary, lest they lose both color and flavor. Guard most carefully every bit of that bright color and flavor to use in making these wholesome honey delicacies.

And now, how about some pie? A luscious strawberry pie—maybe two of them? I knew that would interest you. And girls, if you need a new spring hat, and just haven't been able to find the right approach, here's the answer.

Honey Strawberry Pie

One quart of strawberries, ⅔ cup honey, 3 tablespoons cornstarch, baked pastry shell and 1 cup whipping cream.

Wash, then stem berries, reserving a little less than half of the choicest ones. Mash remaining berries and place in a double boiler; add honey and heat to boiling point slowly. Gradually stir in the cornstarch, which has been moistened with a bit of water; stir constantly until smooth

and clear. Then cook over boiling water for 10 minutes. Cool; then pour over the reserve berries which have been arranged large end down in the baked pastry shell. Chill thoroughly before serving. Serve with honey-sweetened whipped cream.

I like to vary this pie by using a vanilla cookie crust, as shown in the picture. It is so simple, quick and easy and altogether delicious. Simply line the bottom of the plate, filling in open spaces with crumbs, if you wish a solid base, then stand the cookies up around the sides. A graham cracker crust is good with this too. And just in case you have forgotten how it goes, it's like this: One and ½ cups honey-flavored graham cracker crumbs, a scant half cup softened butter and ¼ cup honey. Work the honey into the softened butter; then work into the crumbs. Pat firmly into a pie plate. Chill thoroughly before adding filling.

Strawberry Dainty

One-half pound marshmallows, ½ cup milk, 1 pint strawberries, ⅓ cup honey, 1 cup whipping cream and ⅓ pound vanilla wafers.

Scald the milk; add marshmallows, cut in small pieces; stir until marshmallows are melted. Cool; fold in the berries, which have been crushed and sweetened with the honey. Fold in whipped cream. Crush the vanilla wafers very fine; sprinkle half of the crumbs in the bottom of a refrigerator tray. Pour in the strawberry mixture and spread remaining crumbs over the top. Freeze several hours.

And here's a pie that is second to no other strawberry pie.

Strawberry Cream Pie

One and ½ cups crushed straw berries, ½ cup honey, 2 tablespoons lemon juice, 2 tablespoons Knox Gelatine, ¼ cup water, 2 eggs, ⅓ cup honey, ¼ teaspoon salt, 1 cup evaporated milk, ⅓ cup water, ½ cup whipping cream, and ¼ cup honey.

Combine crushed berries, honey and lemon juice; let stand. Soften the gelatine in ¼ cup water. Beat eggs well, beating honey in gradually; add salt, milk and water. Cook over rapidly boiling water until thick and creamy. Add softened gelatine; cool. When mixture becomes thick and syrupy, beat until frothy. Then fold in the sweetened strawberries. Pour into previously baked pie shell, or a chilled graham cracker crust. Chill thoroughly. When ready to serve spread with the cream which has been whipped and sweetened with the remaining ¼ cup honey. Garnish with whole berries if desired.

Strawberry Crumb Cake Dessert

One cup whipped cream, 1 egg white, 2 cups cake crumbs, sponge or white is good, 1 teaspoon vanilla, dash of salt, 1 tablespoon lemon juice, 1 pint strawberries and ⅓ cup honey.

Fold the whipped cream into the stiffly beaten egg white. Add the cake crumbs, vanilla and salt. Chill. Crush strawberries, add the lemon juice and honey. Mix well, then chill. When ready to serve pile cake mixture in glass sherbets and top with the chilled berries.

Honey Strawberry Tapioca

One quart rich milk, ½ cup honey, ¼ teaspoon salt, ⅓ cup tapioca, 2 egg yolks, 1 teaspoon vanilla, 2 egg whites, 2 cups crushed strawberries, ½ cup honey and whole berries for garnish.

This strawberry pie with its simple, quick and easy vanilla cookie crust is downright delicious.

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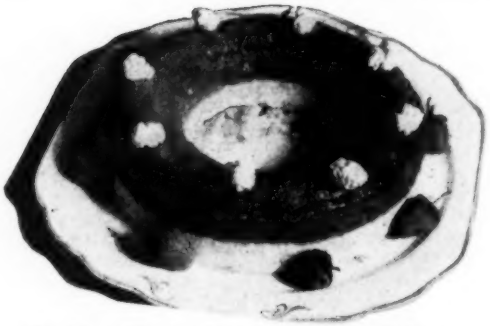


Strawberry-cheese salad is festive enough for most any occasion.

Scald milk in top part of double boiler, add honey and salt. Then pour in the tapioca (the quick cooking kind), stirring constantly. Cook 5 minutes, stirring frequently. Beat egg yolks until thick and lemon colored. Add a small amount of the hot tapioca mixture to the egg yolks, mix well then stir into tapioca in the double boiler. Cook about 2 minutes. Beat egg whites until stiff and fold in hot tapioca mixture. Cool. When partially cool, stir in the vanilla. Chill. Add the honey to the crushed strawberries, mix well to blend. Chill. When ready to serve place sweetened berries in bottom of sherbet glasses or pretty dishes; cover with chilled tapioca. Garnish with whole berry. Serves 8 generously.

When extra or unexpected guests drop in and there simply aren't enough strawberries to go 'round, here's a good trick—and incidently a grand dessert you are apt to repeat just any time. We never have named it but it goes like this: Use one pint of berries; wash, crush and add ½ cup of honey. Stir well to blend. It's a good idea to let them stand a while to achieve that perfect blending of flavors, if you aren't too rushed for time. Then fold them into one stiffly beaten egg white. Whip one and one-half cups of cream until stiff. Now fold the berry mixture into the cream. It should be served thoroughly chilled. This makes a grand topping for slices of sponge or angel food cake—stretching those few berries even further.

For a most refreshing drink: Combine 2 cups of washed and hulled strawberries and ¾ cup honey. Mash berries slightly; then let stand 2 hours. Strain and add one cup of orange juice, one-half cup lemon juice and one-half cup unsweetened pineapple juice. Chill thoroughly. When ready to serve pour into glasses one-third full of cracked ice.

Strawberry-Cheese Salad
First Part

Two tablespoons Knox Gelatin, ¼ cup cold water, 2 tablespoons lemon juice, 1 quart of strawberries and ½ cup of honey.

Soften the gelatin in the cold water, then dissolve over hot water. Crush strawberries, then add lemon juice and honey. Stir in softened gelatin, mix well. Pour into ring mold which has been rinsed in cold water. Place in refrigerator and let congeal while preparing.

Cheese Mixture

One tablespoon Knox Gelatin, ¼ cup cold water, ¾ cup cottage cheese, ½ cup whipping cream, ½ cup salad dressing and ½ cup salted almonds.

Soften the gelatin in the cold water, then dissolve over hot water. Cool. Drain the cottage cheese, if it has been creamed, then measure ¾ cup of the dry cheese. Whip the cream, add salad dressing, drained cheese and finely chopped almonds. Stir in gelatin and blend well. Pour over first mixture. Chill. When ready to serve unmold on a large plate. Decorate top with rosettes of honey-sweetened whipped cream forced from a decorating tube. Place a few choice, unhulled berries around the base.

This salad should not stand over night as it has a tendency to become weepy.

Strawberry Mallow

One pint strawberries, 2 bananas, ⅔ cup honey, 2 tablespoons lemon juice, ¼ cup milk, 8 marshmallows and 1 cup whipping cream.

Mash the strawberries and bananas, add the honey and mix well to blend. Stir in lemon juice. Scald milk, add marshmallows, cut in small pieces, and stir until melted. Add to whipped cream. Fold strawberries into marshmallow cream mixture. Freeze.

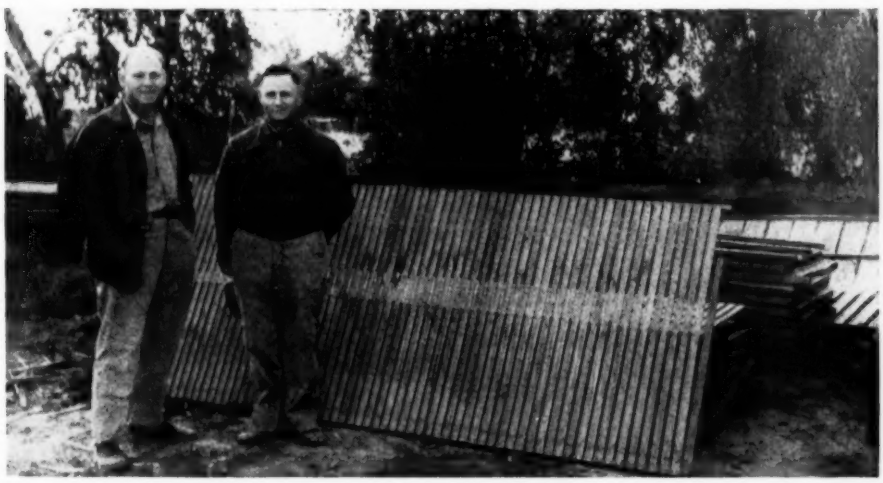
Beekeeping on a Large Scale in the Imperial Valley

By E. R. Root

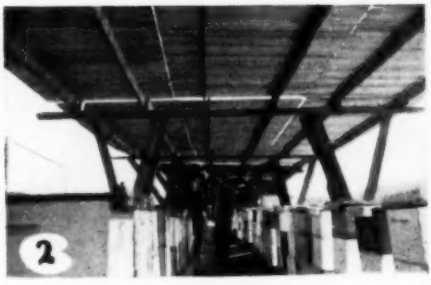
Austin Bros., Brawley, Imperial Valley, California. C. F. on the left and J. L. on the right. They are among the most extensive honey producers in the Valley. Their equipment is the most extensive as shown in the next pictures.

Rex Tabor, one of the extensive beekeepers in California, sold out his apiaries and locations to the Austin Bros., here shown. They are successful beekeepers, a fact which is attested by their equipment and by the tanks of honey shown in Figs. 3 and 4, a whole year's crop. The boys are hard workers, husky, good-looking, and just as genial as they look.

Their methods are shown in the pictures with legends on the next two pages.



Slat frames of Austin Bros. to set on top of their sheds to break up the sun's rays which sometimes in the Imperial Valley reach a temperature of from 120 to 130 and even 140° F. See Figs. 1 and 2.



Figs. 1 and 2.—These sheds or trellis work, supporting the slat frames as shown on previous page are placed exactly east and west. As the sun rises and falls, the hives underneath are always in the broken shade during the entire day making it more comfortable for the bees as well as the beekeeper himself. These two sheds belong to T. H. Shepard of Calexico, Calif.

The outyards of the Austin Bros. are of the same general type as those shown opposite. Sometimes brush, like grease wood, is spread over wire netting and used in place of slats. The brush, of course, must be wired down to hold it in place.

Common lath slats spaced apart as here shown, and as in the bottom illustration on the previous page, break up the sun's rays so that the heat is not so intense as to melt down the combs. Solid shade during the cooler parts of the year, such as afforded by the brush, is not as good as the slats allowing a little heat to penetrate.

Fig. 3.—One of the most extensive warehouses for the storage of honey and bee equipment in all California and the West. The view shows the roadway built up in the rear so that the trucks of honey can be unloaded in the doorways shown. The front of the warehouse has large double doors so that trucks can be driven on the cement floor and where equipment can be loaded or unloaded.

Fig. 4.—Interior view of the warehouse shown in Fig. 3. Workshop for nailing hives and frames is in the foreground. In the middle, are hives and supers of empty combs to go on the hives. In the rear are large galvanized tanks, (not shown) for receiving the honey and to allow the sediment to rise before storing in 60-lb. square cans. In these receptacles, a whole season's crop was being held until a better price could be secured. Honey was mostly amber alfalfa of good flavor and quality. The war has been holding back shipments to Europe where there is a ready market.

Fig. 5 .—This is the fumigating room for killing the wax moth and worms in combs. This pest in warm territory can destroy combs the year around. It is always wise to have a fumigating room in which combs infested and those of doubtful history can be placed and treated. We have seen a whole apiary of combs riddled almost in a week's time in Florida.

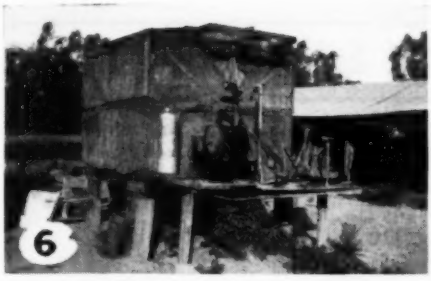


Fig. 6.—The portable extracting house used by the Austin Bros. It consists of a wooden frame-work with a door in the rear mounted on a substantial floor. The whole including the door is covered with wire-cloth except at the top which is covered with white canvas to shut off the sun. The size is such that it can be slid off its stationary posts at the out yard onto a large platform truck on which it can be hauled to another yard and again be slid off onto another set of permanent posts suitably braced. The engine is mounted on the outside as shown. There is plenty of room for a power eight-frame extractor uncapping outfit and a small steam boiler kept hot by a lamp-stove. There is also room for hive-bodies containing combs to be extracted. This arrangement permits a common truck used for other purposes to haul the outfit to the various yards and after unloading it can be used for other purposes. The post frame-work to hold the portable extracting house will give a much more staple foundation than a set of automobile wheels and a chassis supported by a useless set of springs. For the other type of portable on wheels see page 232 of the April issue.

Fig. 7.—The same truck or one like it, can haul a set of steel barrels containing the honey extracted.

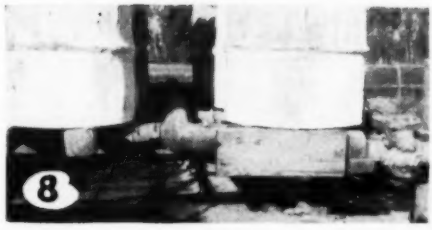


Fig. 8.—Shows a close-up of how the barrels can be hooked together with a scheme of piping and valves. In this case the barrels are mounted on another platform bolted or fastened down. The whole can then be slid onto a truck. In these hot valleys (except San Joaquin) as explained in the April issue, pages 231 and 232, combs can not be hauled to a central extracting station without breaking down but the extracting equipment and the honey when extracted can be hauled no matter if the temperature is up to 140° F. in the sun. Then there is the big advantage that the combs when extracted can be put back in the hives whence they came thus avoiding the danger of scattering AFB when the central extracting station is used. Neither can combs be hauled over rocky mountain roads, not because of heat from the sun but because of the rocks.

Fig. 9.—This shows an outside brick oven and stack. On top is a tank in which combs are melted.

Fig. 10.—This is a huge wax press to receive the slumgum from the melting tank. Where there are a large number of colonies there should be provision for melting up combs and squeezing out the wax. It seldom rains in the Imperial Valley and, therefore, the work can be performed out doors in the cool part of the year and where all the bad odors may pass away. The brick oven shown in Fig. 9 and the big press in Fig. 10 are ample for the work.

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From the Field of Experience

MANNER OF FASTENING HIVES FOR MOVING

By Bro. Stephen Babek

This method of fastening hive bodies together for moving will appeal to those who take pride in keeping their hives neat and free from nail holes.

When moving our bees to the alfalfa fields in 1934 (page 270, May, 1935, Gleanings), I nailed strips of wood on both sides of the hive bodies, for I had no staples on hand. That's too many holes I thought, and staples make holes also, then rain water soaks into the holes and rots the wood. If we intend to move bees every year, why not prepare for it?

I cut 1¼-inch straps from 20-gauge galvanized iron and formed them over and under the hive in two halves, making them long enough to take in one hive-body and two shallow extracting supers. The ends on one half are bent at a right angle and holes punched for a ⅞ stave bolt 3 inches long. In the other half, holes are punched one inch apart to adjust the straps down to two hive-bodies or a hive-body and one shallow super. To these holes a right angle cleat is made with holes and fastened with a short ⅞ stave bolt, and this takes the other end of the 3-inch stave bolt. Now two one-inch strips of wood are placed crosswise under the hive, the hive cover being removed, and strips 2¼x¼x10 inches long are placed across the frames, a full size screen over the hive and a queen excluder on top to hold the screen in place. The straps are slipped over each end of the hive and the bolts are tightened with a screw driver.

Bro. Babek's method of fastening hives for moving.

In cool weather I leave off the screen and simply slip the straps over the inner cover.

The entrance screen is made rigid by forming a light metal frame all around it. The ends are cut and bent over at right angles 1¼ inch wide at the bottom and coming to an edge on top so that the screen rests against the hive on an incline and bees can come out of the entrance. This keeps them from getting excited. A small metal loop is soldered to each end of the screen frame and soft wire is passed through them and fastened to small screw-eyes on the side of the bottom-board.

Subiaco, Ark.

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BEES DO NOT STEAL EGGS

By Allen Latham

On page 154 of March, 1940, Gleanings, C. M. Isaacson once more gives us some good reviewing, yet I must take exception to part of what he has to say. He does not accept Dr. Gregg's conclusion but chooses to accept one even less likely, namely that bees will go into another hive, steal eggs, and return with them to their own hive.

I have great respect for Mell Pritchard but I honestly think that Mell fell down in some way. Capable a man as he is in this case he must have overlooked some detail. If I actually saw a bee go into another hive and there steal an egg and then take it home I would sooner think that I must have been in a daze and dreaming than to believe it to be a fact. Sometimes we actually do think of something of pure imagination and dwell upon it so long that we actually come to believe it is not imagination but fact. Some writers are thus gifted. Anyone reading Maeterlincks's beautiful book must see that such is the truth.

Bees do not reason. They cannot reason. True they will steal honey from another hive, but would they do so if they did not have a sense of smell? Not for one moment do I think that a bee first makes up her mind to go forth and steal honey from another hive. Bees do things

instinctively, and if they ever do steal eggs it must be through instinct. Very well. Why, then, do colonies ever become and remain hopelessly queenless?

Probably every year there are in the United States several thousand hopelessly queenless colonies. Unless helped out in some way every one of these queenless colonies will die out. The beekeeper knows this and gives such a colony a queen or an opportunity to rear a queen. In some cases they acquire a queen through some providential happening.

In my own experience I have had many instances of queenless colonies acquiring a queen through the coming of a queen to that queenless colony. This is especially frequent where one mates queens in baby nuclei and has absconding. Those tiny swarms with only 200 bees or so will roam about for days and I have to keep all my cell-building colonies guarded against them.

Until I protected my cell-building colonies with excluder zinc I had many a batch of cells cut down, for some small absconding colony would find and enter this colony with cells. It is safe to say that I have had it happen more than 50 times.

About 35 years ago I had a special queen which I called my "big Black" for though she was Italian she was coal black all over. She was with a small colony in a log hive and one day while I was absent these bees deserted their hive. In the yard of 20 colonies there was a queenless colony awaiting a queen from me. A few days later I went to give this queenless colony a queen and found it had a fairly well-started broodnest and there was "big Black" happy as a queen.

Just how it is an absconding swarm will find its way into a queenless colony is a matter for cogitation. It will sometimes try to enter a normal colony and most of the bees get killed and the strange queen is balled. I think, though, that they instinctively recognize a queenless colony, just as you and I can do so even before we open it up much.

Therefore, I assert with every confidence that I am right; bees do not steal eggs from another hive but every case where they seem to do so they have had a strange queen enter the hive for a time at least.

Norwichtown, Conn.

AROMA VALUE

By Arthur M. Southwick

There are two lay questions which we have to answer constantly.

1. "Why should I pay twice as much per pound for your bottled honey when I can buy honey in five-pound pails in the stores for so much less?"

2. "Your honey is delicious! That stuff in the stores isn't real honey, is it? It tastes like sugar and water."

Of course, we assure them, "The store honey is good pure honey and good to buy, but our honey has more and better natural flavor due to careful preparation; and there is as much difference in qualities of honey as in qualities of meat, with a corresponding difference in values."

The combination of pleasant taste with pleasant spicy odor is called aroma. Honey with good aroma when eaten sells for a good price and easily. Honey which has lost its aroma competes at a disadvantage with cheap syrups. Therefore, profit in the honey industry depends on the retention of those minute proportional quantities of essential oils in the honey until eaten. So the intrinsic value of the aroma part of honey is tremendous! As you read the rest of this article substitute the word "profit" wherever you see the word "aroma".

Aroma may be lost by leaving the honey, by change within the honey, or by other odors and tastes entering the honey. Let us consider here only how aroma leaves honey.

1. In the perfume industry flowers are laid on glass trays which have been smeared with grease. After a few hours the flowers are thrown away, the grease is scraped off and the perfume is extracted by chemistry from the grease which is then used again to absorb more perfume.

Wax when warm has, like grease, an attraction for aroma. Even at low temperatures wax gradually draws the aroma from honey, so that comb honey cannot be kept long without loosing aroma. It appears that honey should not be left long in contact with wax, and should never be heated until separated from all wax.

2. Extracted honey which is allowed to crystallize solid draws air down into its mass between the crystals. Partial fermentation of honey also creates gas within the honey; and certain methods of pumping,

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straining and pouring honey cause the inclusion of fine air bubbles.

When such honey is heated the fine bubbles of gas rise through the honey, absorbing aroma, and are skimmed off as foam.

With these two exits in mind it is clear that if natural aroma is to be retained, honey must be extracted promptly, strained immediately at room temperature only, heated promptly and accurately, cooled quickly and completely, and sealed in containers which have no waxed liners.

Let us renounce certain all too common practices which have taken aroma from commercial honey.

1. Uncap onto a strainer instead of a capping melter, and whirl or press the honey from the drained cappings.

2. To prevent fanning out aroma keep extractors covered while in motion.

3. Strain the honey unheated as it flows from the extractor, discarding all settling methods of removing wax particles.

4. Heat all honey promptly after straining to stop fermentation and granulation.

5. Avoid the inclusion of air bubbles.

Whether honey is muddy or sparkling clear, water white, golden, pink, green, brown, black, or what have you, it is not worthy of the name or price if it has lost its good aroma.

Waban, Mass.

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SECOND GLANCES

C. M. Isaacson

Gleanings really should not have had those dandelions for its April cover picture—they brought on my yearly attack of bee fever much too early.

That opening article tells, among others things, that Mr. Morse **likes** his bees as well as works them—those items relating to the bees' comfort as well as the beekeeper's profit are proof.

The pollen question receives further discussion on page 207. Mr. Rahmlow's statement that the soybean flour is of value as a supplement, but not a substitute, makes one wonder if it really is used, or if perhaps it is ultimately discarded as were the substitutes we used to feed in former years. If it actually is of substantial value, why can it not substitute entirely for pollen in case of need?

Morley Pettit, beginning on page 208, describes the success of Ontario beekeepers in what I believe will become one of the largest factors in solving our market problems. It is interesting—and important—to note that he stresses two things, quality and dependability, as essentials. These are exactly the factors behind the unusual success of our large dairy co-operative here in Minnesota, and must be included in any attempted honey sales organization. I am awaiting his next article.

"Are we downhearted? No!!" That is an admirable sentiment of Mr. Finn's, but I wonder just how many of us could "take it" as he did. Our profession is not a dull one—bees do inspire enthusiasm and a desire to stick it out—and I predict that he will be hard to stop from now on. His account of his "trials and tribulations" make entertaining reading for the rest of us, and will serve to encourage a beginner who has started to despair of success.

Nearly every observing beekeeper has noted at one time or another individuals resembling the queer "combination" bees described and pictured by G. A. Pauli (page 219). Sight of them moves one to wonder just what vagary of nature produced such freakish individuals in the well-ordered community that is the honeybee colony.

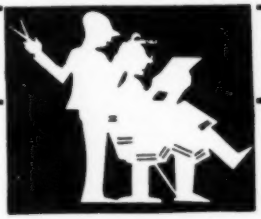
Beekeepers near areas where insecticides are used extensively will read the article on page 221 with interest. The statement given that 59 per cent of those having experience with bee poisoning had over 50 per cent loss, shows that poisoning is usually severe where it occurs at all. Close cooperation between the beekeeper and spray user, as suggested by Dr. Shaw, would seem to be the most likely solution.

If irradiation of honey does help to establish its value more fully with the medical class, it will be well worth trying (page 223). If doctors can be sold on its health value, it will go a long ways towards convincing numbers of others. And did you ever stop to think; honey is almost "irradiated" naturally, coming as it does from the flowers, usually the most sun-exposed part of the plant?

Beekeepers who retail considerable honey can certainly profit by reading the American Honey Institute's April page.

Middle River, Minn.

Just News



For the past year the U. S. Federal Trade Commission has been investigating certain extravagant claims made in favor of the alleged wonderful curative properties of Aguinaldo Cuban honey extensively sold and advertised throughout the country by the Cuban Health Products, Inc., at Lansing, Michigan. (See Docket No. 3733.) On October 10, 1939, the Commission came to the conclusion that said claims "are all to the prejudice and injury of the public and constitute unfair and deceptive acts and practices in commerce within the meaning and intent of the Federal Trade Commission Act". The Commission has therefore ordered that the Cuban Health Products, Inc., shall "cease and desist" from claiming that Aguinaldo honey will cure asthma, stomach ulcers, varicose ulcers, and general digestive disorders and it has been further ordered to file a report showing in detail "the manner and form in which it has complied with this order".

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Some progress has been made in developing strains of bees that show resistance to AFB. This is crowded out of this issue but will appear soon.

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The annual Short Course for Beekeepers will be held in Ames, Iowa, on May 16 and 17. Mr. J. W. Newton of Baton Rouge, La., will be the guest speaker for this year's program. It is proposed by Mr. Newton that his talks to Iowa beekeepers will be of a demonstration nature of the methods which he believes are conducive to developing good stock, both from the standpoint of inheritance and from the standpoint of well-reared individuals. He will also give demonstrations of methods which give best results in preparing package bees for shipment to northern producers. The general theme of the short course will be better stock. The Short Course lectures are open to anyone who is interested in honey production. There is no fee charged for attending any or all of the lectures. Topics of interest to Iowa producers will be presented by State leaders and ample opportunity will be given to visit the College experimental apiary.

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In a recent folder put out by Pillsbury Flour containing 14 recipes for whole-wheat breads and specialties five of the recipes call for honey instead of sugar.

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The Powell's Bee Farm, Newellton, La., lost their home, warehouse and honey house on March 10 by fire which was caused by a pan of beeswax boiling over on a hot cook stove. The loss included household goods, clothing, cash, bee supplies and honey. The loss was nearly $2,500.

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The first field meeting this year of the Middlesex County Beekeepers' Association will be on Saturday, May 25, at 2 P. M., at 30 Spring St., Lexington, Mass. Mrs. W. M. Copeland, President of the Ladies' Auxiliary will be hostess, and Mr. Copeland, President of the Mass. Federation of Beekeeper's Societies will be host. Miss Irene McCollister of Ayer will open the hives and speak on "Comb Honey Production". Those who attend will bring box suppers.

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..**A very interesting and valuable bulletin** has just been issued (Feb. 1940) by the U. S. Department of Agriculture, a "Brief Presentation of the Characteristics, Contaminants, Processing, and Uses of Beeswax" by Geo. H. Vansell, Division of Bee Culture, and C. S. Bisson of the California Agricultural Experiment Station. Much attention is paid to the contamination of beeswax by low melting point resins in propolis, which make the wax so unsuitable for certain uses notably the cosmetic field. The bulletin is based on results of investigations made in cooperation with the University of California.

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A Maine State Beekeepers' Association was formed at Orono, Maine, on March 28. Paul T. Caine of Winthrop, Maine, was elected President and Charles O. Dirks of Orono, Maine, Secretary-Treasurer. During the Annual Farm and Home Week at the University of Maine an all-day program was given on beekeeping.

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Who's Who in Apiculture

To supply a handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping, and other information often needed by our readers, we have corrected our Who's Who in Apiculture, as of April 1, 1940.

State or Prov.	Beekeeping Taught in Agr. College	Bees on Combs Admitted	Net Wt. Law Ext.	Net Wt. Law Comb.	Inspector State or Province	Secretary State Association
Ala.	Yes	No	Yes	No	Thomas Atchison, Mont.	F. E. Guyton, Auburn.
Alb.	No	No	Yes	Yes	W. G. leMaistre, Edmon.	W. G. leMaistre, Edmon.
Ariz.	No		Yes	No	W. A. Crockett, Phoenix.	W. A. Crockett, Phoenix.
Ark.			No	No	J. V. Ormond, Elba.	J. V. Ormond, Elba.
B. C.	No	No	Yes	Yes	A. W. Finlay, New Westm.	A. W. Finlay, New Westm.
Calif.	Yes	Cert.	Yes	Yes	H. M. Krebs, Sacramento.	C. W. Hartman, Oakland.
Colo.	No	Cert.			F. Herbert Gates, Denver.	L. R. Rice, Greeley.
Conn.	Yes	Cert.	Yes	Yes	K. B. Friend, New Haven.	Chas. J. Rost, Meriden.
Dela.	No		No	No		John M. Amos, Newark.
Fla.	Yes	Cert.	Yes	Yes	R. E. Foster, Gainesville.	W. H. Williamson, Aub.
Ga.	No	Cert.	Yes	No	A. B. Dowling, Valdosta.	J. G. Rossman, Moultrie.
Idaho	No	No	Yes	Yes	W. T. Callender, Boise.	K. M. Hutteball, Boise.
Ills.	Yes	Permit	Yes	Yes	Carl E. Killion, Paris.	Hoyt Taylor, Pleasant Pls.
Ind.	Yes	Cert.	Yes	Yes	Jas. E. Starkey, Indianapo.	Jas. E. Starkey, Indianap.
Ia.	Yes		No	No	F. B. Paddock, Ames.	F. B. Paddock, Ames.
Kans.	Yes	Cert.	No	No	R. L. Parker, Manhattan.	H. W. Stewart, Highland.
Ky.	Yes		No		W. A. Price, Lexington.	W. A. Price, Lexington.
La.	Yes	Permit	No	No	W. E. Anderson, Baton R.	E. C. Bessonet, Donaldson.
Me.	No	No	Yes	Yes		Charles O. Dirks, Orono.
Man.	Yes	No	Yes	Yes	L. T. Lloyd, Winnipeg.	L. T. Floyd, Winnipeg.
Md.	Yes	Cert.	No	No	G. J. Abrams, College Park.	G. J. Abrams, College P.
Mass.	Yes	Cert.	Yes	Yes	Burton N. Gates, Boston.	E. F. Trainor, Worcester.
Mich.	Yes	No	Yes	Yes	D. P. Barrett, Lansing.	R. H. Kelty, Lansing.
Minn.	Yes	Cert.	Yes	Yes	A. G. Ruggles, St. Paul.	N. J. Ellingson, Northfield.
Miss.	Yes	Permit	No	No	Clay Lyle, State College.	Clay Lyle, State College.
Mo.	Yes		No	No		Geo. D. Jones, Columbia.
Mont.	No	Permit	No		Dale Felix, Corvallis.	
Nebr.	Yes	Cert.	Yes	Yes	L. M. Gates, Lincoln.	C. A. McGuire, Lincoln.
Nev.	No	No	Yes	Yes	George G. Schweis, Reno.	Mrs. Frank Lima, Fallon.
N. B.	Yes	No	Yes	No	H. G. Payne, Truro, N. S.	E. D. Craig, Kentville, N. S.
N. H.	Yes	Cert.	Yes	Yes	Geo. Barton, Meriden.	H. J. Holt, Manchester.
N. J.	No	Cert.	Yes	Yes	P. L. Holcombe, Lambertv.	E. G. Carr, Pennington.
N. M.	Yes		Yes	Yes		
N. Y.	Yes	Cert.	Yes	No	A. C. Gould, Albany.	E. T. Cary, Syracuse.
N. C.	Yes	No	Yes	Yes	P. G. Craddock, Raleigh.	F. B. Meacham, Raleigh.
N. D.	Yes	Permit	Yes	Yes	J. A. Munro, Fargo.	Arvid Benson, Fargo.
N. S.	Yes	No	Yes	No	H. G. Payne, Truro, N. S.	E. D. Craig, Kentville, N. S.
Ohio	Yes	Cert.	Yes	Yes	Chas. A. Reese, Columbus.	W. E. Dunham, Columbus.
Okla.	Yes	Cert.	Yes	Yes	J. M. Goin, Oklahoma City	J. M. Goin, Oklahoma City.
Ont.	Yes	No	Yes	No	E. J. Dyce, Guelph.	E. J. Dyce, Guelph.
Ore.	Yes	Cert.	Yes	Yes	A. Burr Black, Corvallis.	H. A. Scullen, Corvallis.
Penn.	No	Cert.	Yes	Yes	H. B. Kirk, Harrisburg.	H. M. Snavely, Carlisle.
Que.	Yes	No	Yes	Yes	Jules R. Methot, Quebec.	A. Prud'homme, St. Isidore
R. I.	No	Cert.	Yes	Yes	Howard A. Pike, Conimicut.	O. E. Janson, Providence.
Sask.	No	No	Yes	No		R. M. Pugh, Fort Qu'Appe.
S. C.	Yes	Permit	Yes	Yes	J. A. Berley, Clemson Col.	J. F. Switzer, Roebuck.
S. D.	Yes	Cert.	Yes	Yes	C. S. Weller, Pierre.	
Tenn.	Yes	Cert.	Yes	Yes	Julian Allison, Nashville.	G. M. Bentley, Knoxville.
Tex.	Yes	Cert.	Yes	Yes	C. E. Heard, College Station.	H. B. Parks, San Antonio.
Utah	No	Cert.	Yes	Yes*	W. H. Hendricks, Salt Lake.	A. W. Anderson, S. L. City.
Vt.	No		Yes	Yes	Charles Mraz, Middlebury.	Chas. Mraz, Middlebury.
Va.	No	Permit	Yes	Yes	H. W. Weatherford, Vern. H.	H. W. Weatherford, V. H.
Wash.	Yes	No	Yes	Yes	R. E. White, Olympia.	Eva Wixon, Wapato.
W. Va.	No	Cert.	Yes	Yes		
Wisc.	Yes	Cert.	Yes	No	E. L. Chambers, Madison.	H. J. Rahmlow, Madison.
Wyo.	No	Permit	Yes	Yes	C. L. Corkins, Powell.	

* If in package form.

United States—Investigation and Demonstration in Beekeeping, James I. Hambleton, Bureau of Entomology and Plant Quarantine, Beltsville Md.; Southern States Field Laboratory W. W. Whitcomb, Baton Rouge, La.; Pacific Coast Laboratory, Frank E. Todd and Geo. H. Vansell, Davis, Calif.; Inter-Mountain Laboratory, A. P. Sturtevant, Laramie, Wyoming; Bee Culture Field Station, C. L. Farrar, Madison, Wisc.

Dominion of Canada—Investigation and Demonstration in Bee Culture, C. B. Gooderham, Dominion Apiarist, Experiment Farm, Ottawa, Canada.

American Honey Producers' League—Pres., T. C. Burleson, Colusa, Calif.

Apiary Inspectors of America—Pres., H. M. Krebs, Sacramento, Calif.

Southern Beekeepers' Conference—Pres., E. C. Bessonet, Donaldsonville, La.

American Honey Institute—Chairman, Lewis W. Parks, Watertown, Wisc.

(Continued on page 340)

Editorials

The Silver Lining for 1940

Elsewhere we have pointed out some of the difficulties ("Flies in the Ointment") that the beekeeper will meet this season. It can not all be bad. Prospects are for a real old-fashioned honey season throughout the country. The region of the dust bowl of the central states is suffering from drouth at this writing. We have had an old-fashioned winter in the clover regions and with it a large amount of snow, deep and lasting. Usually a white clover yield will follow a winter of much snow.

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Cooperatives Good and Bad

The following from a procurer of honey has just come in:

We have read with considerable interest the article in your April number relative to the cooperative in Ontario, Canada. Personally we hope that the Canadian organization is as successful as Mr. Pettit tells us in his article. We wish that honey cooperatives in this country might show up as favorably. It is not necessary for us to recite the very sad experiences which beekeepers in this country have had in the cooperative marketing of their honey. . . . . We think it would be most fitting if you would call attention editorially to the experiences which beekeepers in this country have had and which they are going through right now.

These articles by Mr. Pettit referred to, descriptive of the working of the Ontario Honey Producers' Cooperative, show some of the reasons why most of the cooperative honey associations in the United States have had so sorry a history. There have been some colossal failures, such as the California Honey Producers' Exchange and the Mountain States Honey Producers' Association. Besides these, there have been a great many lesser failures. In fact, it has been stated that, with an occasional exception, the history of cooperative honey selling in the U. S. has been one of mistakes and failures.

Many of the mistakes of the past might have been avoided if economical, experienced, efficient management had been provided. Too often the management was more interested in extending operations to fields far away in wasteful travel than in giving the long suffering charter members a fair return for their honey. Apparently there has been too much promotion propaganda by cooperative-minded officials who have assumed that selling honey cooperatively is no more difficult than selling oranges or potatoes cooperatively.

Managers have been employed who have had a scanty experience in cooperative selling in other lines but who knew nothing at all about honey or honey markets. Poorly graded, inferior-flavored, and even fermented honeys have been sent out with the stamp of approval of the cooperative, hurting the markets and in time blasting the reputation of the association back of it.

Some managers have been employed whose sole interest, financial or otherwise, has seemed to be a volume of honey sales. Good honey has been sold at prices ruinous to markets in general. The producers lost money and the managers ultimately lost—their jobs.

Honey varies in moisture content, in color, and in flavor. Some managers of cooperatives have apparently not been aware of that and have assumed that honey is honey. They have not known that honey may take on moisture from the air, that colors and flavors are ruined by ignorant handling and careless heating. Too many managers have not known that a gassy appearance is often due to an initial stage of fermentation.

Intelligent planning takes account of the mistakes of the past. All too frequently a cooperative has failed for the very reasons that others failed before, the management being oblivious to the pitfalls because of ignorance of fatal mistakes made in other parts of the country.

Producers should not be too quick to believe that, because potato growers, for example, have received more for their product through a cooperative association, beekeepers can necessarily do the same. The beekeepers may receive more, if certain precautions are taken. A careful reading of Mr. Pettit's articles shows why so many cooperatives in the United States have failed and why the Ontario cooperative is succeeding.

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Honey Prices. Don't Get Scared

In the Government report for March 24, last paragraph, we find this, "Demand for honey in large lots seems to be somewhat better, with more interest reported in honey for shipment abroad".

On the other hand, in California there is a large amount of amber

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honey unsold mainly because it cannot be shipped to Germany. Then there is the factor of Cuban honey still unsold and for the same reason.

It is evident that there has been no great rise in the price of food products during this war and we can not expect honey to advance in the near future. Says a news dispatch, "The difference between the price trend of this war and that of the last, is due in large part to the difference in the character of the war".

At this writing there is no peace move and apparently hostilities will continue for some time to come.

Unless sugar is rationed in this country, and that will not be unless we get into the fight, honey will follow the trend of other food prices.

Again, if honey can continue to go to Great Britain and her allies, prices will be firm with an upward trend. Certainly no great advance can be expected at this time.

In the meantime, don't let the embargo scare on Canadian and American honey be taken too seriously. It has not yet gone into effect.

The prospects for clover honey in the East, sage, orange, and light alfalfa in the West, were never better. There has always been a market for these light good-flavored honeys at prices that are fair. It is the amber and off-flavored honeys that are being held for better prices.

In Arizona and in Texas and Louisiana the market was beginning to pick up. If Canadian honey is cleaned up and car lots have gone to Canada the time to worry is not now.

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Flies in the Ointment of Beekeeping

There are several of them in bee culture. One has been pointed out, February, page 95; namely, sending a dirty or unstrained honey to the baker, spoiling the market for the beekeeper who tries to sell the baker good honey.

(2) Price cutting in both honey and package bees. The figures at which honey is sold in tin pails and bottles along roadsides is bad enough in the East but worse in the West—e.g., a five-pound pail of good table honey at 35c. Such a price will put the roadside stand out of business soon.

(3) Dusting with poisons by airplanes, on cotton, alfalfa, and other sources of honey that the bees visit is destroying whole apiaries of bees in less than 24 hours. Whole areas have been cleared of bees in Texas, Louisiana, and California following in the wake of plane dusting. The rancher contends that the growing of cotton and alfalfa is more important than beekeeping and that if it were not for the dusting the plant life would be wiped out and the bees would have no pasture. We shall have more to say about this but it is a very serious fly in the ointment.

(4) The use of carbolic acid in freeing bees from supers of honey. This is another fly in the ointment that is much more serious than the average beekeeper would believe. Carload buyers of honey and the big bake shops are protesting about honeys offered that have a bad odor. Two of the largest buyers of honey in California told the writer that they will not knowingly purchase a honey that comes from supers in which the carbolic method has been used. The situation is the more serious because some large producers contend that they use the acid and that they discover no "taint" to their honey. Here is something that they may not know and which may ruin the industry of honey production. When heat encounters starch and fats in baked goods an obnoxious odor may develop when heat alone may not do it.

If the newspapers get to broadcasting carbolic acid in honey it may do ten-fold more damage to the honey market than the so-called "Wiley lie" ever did to comb honey.

(5) Some careless users of capping melters have been mixing their capping-melter honey with the large lot taken by the honey extractor. Not all such honey carries an odor of cocoons but brokers and jobbers have shown us and had us taste honey that had been melted with the cappings but which carries a color and odor that bakers and bottlers do not like. If all beekeepers would follow directions faithfully there might be no trouble. But not all producers are careful or they depend on hired help that is not as scrupulously clean as their employers. We strongly urge that beekeepers do not mix capping melter honey with that taken with the extractor. Sell it separately and for what it is.

(6) Lastly, there are bound to be complaints from delayed shipments of package bees. Much of the package bee territory in the Southland was terribly hit by a severe winter the

like of which, possibly for some sections, has not been experienced in a generation.

Reports from the North and East would indicate that the winter loss of bees will not be as great as first reports showed. The winter was about as severe in point of temperature in parts of the South as in the North, but the South can't stand near-zero temperatures.

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Winter Losses Over the Country

At this writing, April 10, it is impossible to give accurate figures in percentage, but it is feared that the mortality will be heavy in the Eastern and Northern sections of the country. In Ohio, Dr. Dunham, Extension Apiarist, estimates that the winter loss in some sections may be as high as 70%. In the middle West and North the loss is not above normal where the winter has not been very cold.

Last fall it was very dry and many colonies in Ohio were short of stores. This meant that the clusters were small. Here packing would perhaps have been of value.

At the Root Company's Apiaries

Although the winter has been severe with prolonged spells of no-flight days, our loss is only slightly greater than last year with the probability that the large majority of our colonies will be in fine condition to catch a honey crop. Most of our bees at our out yards were in single-walled two-story colonies with an upper entrance of a ⅝-inch hole in the hand hold of the upper story. The colonies had young queens, good clusters of young bees in the fall, and plenty of honey well sealed in the combs, and, of course, a large reserve of natural pollen, or all the bees could get. Most of the apiaries were in protected locations in the brush and young timber. One apiary was out in the open.

Home Apiary

Here the colonies were divided into two groups both in two stories—one group packed and the other not packed, both groups having upper entrances in both stories with a small bottom entrance. The winter loss in both groups was surprisingly low. Except for the packing in one group, all colonies were prepared like those at the out yard, viz., natural stores, all the pollen they could get, young queens, and all with clusters of bees of near equal size in the fall. One of the packed colonies was dead and very wet inside. The loss here was probably due to the loss of the queen in early winter.

Of the two groups, on April 10, the unpacked colonies had slightly more bees and a little more brood. It is too early yet to give accurate estimates but this winter and those preceding at the out yards would seem to indicate as before that when the colonies are strong with plenty of stores the value of packing has been over-estimated. Vice versa, when colonies are weak and low in stores packing may be a help. More emphasis should be put on a young queen supplied in late summer and early fall. This means brood-rearing and young bees to go into winter. It is shown very clearly, that there must be an abundance of sealed honey in the combs occupying two stories, plenty of pollen, windbreaks, and last, but not least, upper entrances in the hand hold of the upper story to allow the escape of moisture.

The illustrations on page 322, show a fair average of the colonies opened up for inspection.

Upper Entrances

While the upper entrances were spotted some with dysentery marks, the colonies inside were sweet and clean and of enough strength so that we feel that the majority of our colonies will be strong enough in early June to harvest a crop. It is apparent that a few old bees suffering from dysentery from the long cold with no fly days, flew out on the first day when the sun did shine and left their marks. Their place was more than offset by young bees.

It should be noted that warm, moist air rises. If there is no upper entrance for its escape it will go into the packing if present, make it moist or wet, and when it freezes it is obvious that it is of no value. Better by far to have no packing than have it wet and freeze around the bees.

Importance of Temperature Changes

It is apparent that temperature changes induce brood-rearing even in mid-winter. The U. S. Government laboratories have shown that winter brood-rearing is a normal condition. The fact is it has been going on for years and the old orthodoxy didn't know it. It is winter brood-rearing that furnishes young bees to replace the old bees that are dying.

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From North, East, West and South

NORTHERN CALIFORNIA, Mar. 31.

Weather: After writing what we thought was a modest account of our floods, in our last letter, we wondered if we would be charged with having exaggerated the situation. That storm and flood was truly unusual. Now at the end of March, we are having another very unusual rainstorm and floods again. The papers tell us it is the heaviest rainstorm in 46 years.

Condition of Bees: In our last letter, we stated that 2000 colonies had been lost in the flood, but the list grew to 3000. Although the present flood is in many ways greater than the last, we do not expect as great a loss of bees. At least, we hope our guess is right. Swarming commenced in the Bay Region early in March. We expected heavy swarming but the rain has discouraged it some. We are not sure of what to expect in April. Bees have been greatly hindered in their pollination of fruit trees. Some bees will be moved into the oranges and sage.

Reports of bees being destroyed by poisons used in spraying crops have commenced to come in. It is reported that a poison has been found and is being used in California which will kill mustard, wild radish, turnip, etc., without injuring the growing crop. This has caused beekeepers to shudder. For years, the farmer has fought star thistle. Many beekeepers depend on this plant for their entire crop. It is said this poison will produce the result the farmer has so long sought in vain. Unless a well concerted attempt is made to find valuable plants which appeal to the farmer and are also major honey plants, we may some day wake up to find our investment no longer of much value.

Honey Market: There is little change in prices and little honey being offered. Buyers assure us there is more than enough offered.

Beeswax: Prices remain about the same as reported last month.

Miscellaneous: The efforts on the part of beekeepers for organization continues in all parts of the state. We are informed that the organization planning to use large amounts of honey in the manufacture of cereals has been successful in interesting capital and before this letter appears in print, will be buying honey. The promoters have been tireless in their efforts and deserve success.

Organization is our only hope for the future. Every progressive beekeeper is agreed on this. However, strange as it may seem, while he is urging organization, he has neglected to pay his membership fee in the only organization we have. In spite of this, we feel there is still hope.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, April 1.

Weather: Shortly after midnight of March 31 thunder began rumbling over Southern California. About 2:30 A. M. rain began falling until at this writing one and one-half to two inches have fallen over most of Southern California. This puts a much brighter outlook on the prospects for honey and farm crops.

Crop Prospects are much better than one month ago. Oranges have been blooming for some time but hardly a bee can be seen on the blossoms. There seem to be prospects of a very heavy bloom. Myriads of white buds are showing and if they all break into bloom and furnish nectar—well, here's hoping. Sages and other honey plants are looking well and with this nice rain should give a good account for 1940.

Market: There is little if any change in the market. Very few beekeepers have any honey left and beeswax remains around 21 cents.

Miscellaneous: Bees have consumed a large amount of stores and have been slower in building up than in some years. There has been a profusion of bloom on the alfilerae and while the bees were getting considerable pollen there seemed to be little or no honey. A shortage of rainfall the past month may account for it to some extent.

Sages and wild buckwheat look well and we think they will yield

some honey. But there are other beekeepers who have been in the business for many years who say, "I never saw a crop of honey from the black sage without plenty of early rains".

There is no beekeeper so unfortunate as the fellow who is not ready when the honey flow comes. Let us have supers, combs, hives, extracting outfit and all ready when the honey flow comes. It may make the difference between a half and a full crop.

Mr. Miles of San Bernardino has a capping's box that he made himself that appeals to us as the most practical of anything we have seen. It holds a day's cappings and by next morning the cappings are dry and the box ready for another day's work. There seem to be improvements in our industry yet for the ingenious beekeeper.

The sun is coming out at 11 A. M., April 1st, and nature as well as the people seems to be smiling all over. The rain came just in the nick of time.—L. L. Andrews, Corona, Calif.

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COLORADO, April 4.

Weather: Spring, the most fascinating season of the year, is again with us, and it seems that it is even more beautiful than any other spring of the past. Is it that we so easily forget the past and are thinking only of the present, or can it be an ever-growing appreciation or craving on our part to be with and watch things in nature evolve into new life. In the fields and pastures, and by the waysides, long dormant seeds and plants are awakening from their slumber and reaching skywards in a solemn rite while chlorophyll is being compounded within their newborn leaves. Over the countryside bees are busily engaged among early blossoms gathering fresh pollen and nectar to treat their young.

We were well blessed with precipitation which fell during the winter months, covering the state many times and put the ground in an excellent condition for plant growth and transforming some of the most desert-like places into green gardens. The snow masses on some of the mountain ranges are somewhat below normal and more will be welcome to augment the supply for irrigation for the coming season. There is yet ample time for this during the next month or so. We have had comparatively few windy days this spring. On March the first a strong gale came rolling in from the north carrying along in its wake dust, sand and debris, and finally snow as it developed a speed of 65 miles per hour. Some buildings were strewn about, bee hives were turned over and lids torn off.

Bees: The condition of the bees is not altogether what we would like it to be. The colony loss has not been very heavy, probably only around five per cent, but the clusters are deficient in individuals which may lead to dwindling during the spring of many colonies. This is especially true where the stores were scant or of inferior quality.

Market: The honey market has held its own fairly well and no material change has taken place, either in prices or demand. In general, there seems to be considerably more honey on hand now than was at this time a year ago, but as it is nearly four months before the new crop will begin to appear much of the old crop will be consumed in that time.

Miscellaneous: From surveys conducted of egg beds it is predicted that the hatch of grasshoppers this spring will be large if the weather condition is favorable at the time of the hatching. Extensive plans are being formulated for wholesale poisoning. Young hoppers were found to be hatching in this vicinity a few days before Christmas.—G. A. Pauli, Pueblo, Colo.

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TEXAS, April 1.

Weather: March came in as the proverbial lion, then it looked around and saw the failure of past months to do their duty. The sight was so terrible that March commenced to sob and then to cry and the last week in the month broke into showers of tears. For the first time in three years we have a sufficient amount of moisture on hand to bring flowers into bloom, grass into existence for pastures, and to fill the tanks with stock water. The country really looks like itself again. At the first of the month it was a problem of just how to keep the bees through until a honey flow if one ever came. Just at present the problem is to prepare the bees so that they may build up and be ready for a honey flow if the weather still permits one. Where bees are cared for,

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they are just as much advanced as they would be in normal years. Thirty hives recently broken up for mating colonies showed an average of six full frames of brood per two-story ten-frame hive.

The influence of locality again shows itself in the use of pollen. The hives mentioned above were examined every week through the winter. During the latter part of December small amounts of pollen were stored. The first two weeks in January some pollen was available but the bees did not collect. The first week in February small quantities were brought in from early blooming mustards. About the middle of the month wild plums had reached their height of blooming and much pollen was stored. The latter part of the month and the first part of March early composites, poppies, and legumes furnished the bees with great quantities of pollen and some small amounts of nectar. The bees stored pollen only in two combs, one at each side of the brood nest. At the last observation made, while there is abundant pollen in the field, only small amounts are being brought in and considerable pollen already stored is being thrown out of the hives by the bees which is necessitated by an ever-expanding brood nest. It seems to be that if there is an abundant supply of pollen in the field the bees store only small amounts and where there is no supply in the fields they store larger amounts.—H. B. Parks, San Antonio, Texas.

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SOUTHWESTERN IDAHO, April 2.

Weather: Our past winter was very mild and ideal for bees, with sufficient warm clear days for good flights. At no time were bees confined for any length of time. Bees came through in excellent shape, with very little winter loss, and are building up early. Heavy swarming is anticipated. Colonies will reach their peak and be on the down grade when our honey flow starts. Dandelions are beginning to show up and will be in full bloom in a short time.

Honey Market: Honey has moved very well through the retail stores. The wholesale market has been rather slow since December. There doesn't seem to be much carry-over.

Beeswax has been moving readily at 20c to 22c.

Crop Prospects: With the heavy rainfall prospects look much brighter than they did the early part of winter. The large reservoirs filling up with storage water should insure proper irrigation.

Miscellaneous: The Western Idaho Honey Producers' Association held its annual meeting with the inspectors at Caldwell, Idaho on March 22. Mr. Clyde Williams, Nampa, was re-elected President, Mr. Roy Babbett, Caldwell, Vice-President and Mr. A. D. Wood of Boise, Sec.-Treas. We regret very much to announce the death of one of our pioneer beekeepers, Mr. A. I. McClanahan of Payette, on Feb. 28, 1940. He was well known through Idaho and Oregon and took an active part in our associations. He had the reputation of getting more honey per colony than any other honey producer in this part of the state.—A. D. Wood, Boise, Idaho.

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NORTH DAKOTA, April 4.

Weather: Rain, sleet and snow which has been fairly general over this section of late has done much to buoy up the hopes of farmers and beekeepers generally. Up to the third week in March the weather was rather mild, at least for a North Dakota winter. Snowfall had been very light and the soil quite dry in many places. Dust was beginning to blow off tilled fields but all this was changed by the recent precipitation. The recent spell of wet weather has brought the moisture up to normal for this time of the season according to the latest weather reports. Fields are too wet as yet to permit seeding but it is expected that in another week spring work will be in full swing. In the woods the snow is still a foot or more in depth.

Beekeeping Conditions: Due to the delayed spring weather, few cellar wintered colonies have been moved out-of-doors but it is probable that they will all be taken out in the course of the coming week or ten days. Bees of outdoor wintered colonies have flown to a slight extent. None of the early pollen and nectar producing sources, including willows, maple, and elm, are ready for the bees but should begin soon.

Just how the colonies fared this past winter is unknown except for a few scattered reports of losses ranging from light to 10 percent or more. The heavier losses are reported as due

mainly to starvation and are from localities where the nectar flow tapered off early last season. Such colonies probably went into winter somewhat light in stores and with fewer young bees than for areas where the nectar flow continued late.

Honey: Several carloads of honey produced in the Red River Valley have been shipped to Canadian markets according to word from M. W. Cousineau, local dealer. The prospects are that there will be practically no carry-over of honey here into the new crop. Prices remain practically unchanged.

Miscellaneous: Beekeepers are taking out licenses on their apiaries for 1940. All license fees should be sent to the State Department of Agriculture at Bismarck. The recently enacted law requiring licensing has been in operation since April, 1939, and has received favorable support from beekeepers generally. The fees range from $1.00 for ten colonies (or less) to $25.00 for above 200 colonies. The money is made available for apiary inspection in the state. Of 11,695 colonies of bees inspected in 33 counties last year, a total of 143 hives were found with AFB and destroyed. Had it not been for the money contributed by license fees very little inspection work would have been possible.

The beekeepers' associations of North Dakota and Minnesota are endeavoring to secure reductions in express rates on package bees from Southern and Pacific coast states. The general feeling is that present rates are excessive and are forcing many beekeepers to haul their package bees long distances by auto truck to avoid paying the prohibitive rates now in effect.—J. A. Munro, Fargo, North Dakota.

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SOUTH DAKOTA, April 5.

Weather: We heard the first meadow lark this morning! Its high, galloping rhythm disturbed my sleep and had the effect of jarring loose the last distasteful inhibitions of winter. It's turning out to be the prettiest day we've had so far this year. It will be right difficult to keep the bridle on for the duration of this report.

Bees: Among those who winter in the cellar, some have already taken their bees outside and report quite successful wintering.

Bees packed outside seem to have suffered worse luck than might have been expected with some reports of from 15% to 30% loss. Part of the trouble can be accounted for all right by an erratic and confounding winter; but there is probably more to it than that. Under the systems of forced supersedure and routine dividing that is often employed for requeening and increasing it is logical that the first virgin to emerge in a colony is a poorly fed, stunted one. This under-privileged queen may have a fair capacity for keeping a colony going through the summer—but a bad winter calls for something with more vigor than that. Young queens from a good breeder, or one's own grafted, hand-reared queens are the answer to the problem, I think. But how in tunket is everybody going to get around to everything?

Some of the larger outfits are now preparing to receive packages to replenish or increase their number of colonies.

Crop Prospects: They are not too good. The dry fall was unencouraging to clover, and though we had three inches of moisture in March the principal rain fell on frozen ground and ran off. As indicated by digging there is about six inches of moisture while underneath it is as dry as a Pharaoh's tomb.

There will be a small hold-over of honey, mainly among smaller outfits. Larger producers sold in a lump or worked with a vengence on local distribution till the job was done. Such honey as is left simply wasn't pushed in view of the price situation.

Miscellaneous: I have a letter from a very vexed compatriot who takes off my scalp for reporting the price of honey as it is here locally. He declares that instead of reporting an average best price one should look far and wide to find the lowest existing price for the report. This low price, he said, would discourage any out-of-state truckers who might be inclined to roll in and dump a few loads on us natives.

I took the matter up with some of the fellows here and they said, "Tommyrot! If the lowest price you can find is published it will depress our whole market because many beekeepers who read it will take for granted it is the regular general

price and will cut their price to it or below it accordingly. So what do you have? Chaos!"

Beside that I think any reporter is side-stepping his duty in not reporting as near to the facts as possible.

You've got to look a long time to find such photographic art as is contributed by G. A. Pauli to recent cover pages of Gleanings.—J. F. Norgren, Junius, So. Dak.

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ILLINOIS, March 26.

Weather: The exceptional fine fall weather mentioned in my last report in the January issue has faded to a mere memory. Old Man Winter came for a visit about January first and when I looked out the window just now I saw him sitting outside. It is strange how a visitor can be so unwelcome and still stick around even failing to become insulted at our remarks. There were many days of sub-zero weather during January. We have received a fair amount of moisture in rain and snow this winter.

It is just a little early to report on honey plant conditions except on the two fields of clover examined. These showed no great material damage.

Condition of Colonies: A heavy winter loss is now being reported. Reports already show at least 25% loss with some as high as 60%. One beekeeper reported a loss of 65 out of 115 colonies as early as February. Another apiary of 38 colonies lost 16 and the remaining 22 were very weak with only a pint to a quart of bees in each. None of these colonies were packed or protected in any way. There have been a few mild winters and many were firmly entrenched in the no-packing idea. Many will have a change of heart after this year. It is evident that many packages will be bought this spring.

Honey prices still remain at about the same level as they were last fall. The retail price of the five-pound pail has been used as a price football with a spread of from 43 to 70 cents. Comb prices have been a little more uniform at 16½ to 23 cents per section.

Miscellaneous: The attendance at all winter meetings has been very good, from the national meeting at Sacramento down to the district and county meetings. One topic of conversation one could hear along the side lines was "organized selling, uniform grading, standardization and national advertising". Maybe a good whispering campaign will start us on the right road. Once a long time ago people became tired of conditions that existed and the Boston Tea Party resulted. Maybe we can start the American Honey Party, but instead of pouring our fine honey into the Atlantic let's pour it into a million American homes.—Carl E. Killion, Paris, Ills.

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NEW YORK, April 1.

Weather: March has been a very cold month with no warm days, in fact, during the past week the northern half of the state experienced an unusual blizzard, halting traffic and adding more snow to that accumulated earlier. The city of Syracuse reports 104 inches of snow during the winter while points farther north have had much more.

Bees: While it is too early to estimate accurately, it may safely be said that there will be a heavy winter loss, especially with unpacked colonies. Many apiaries have had no flights since early December and even some of those getting at least a partial flight on February 12 are seriously affected with dysentery. One beekeeper reports an entire apiary died during January as a result of honeydew stores. Some of our own apiaries will have little if any loss while others only a few miles away, but somewhat shaded and exposed, have many dead. Apparently these missed the opportunity for flight on February 12.

Prospects: At the present time conditions do not look too encouraging for a clover crop. We had a severe drouth last summer which extended into the fall and winter, even through January, killing many new seedings and leaving the soil extremely dry. Heavy snowfall during February and March has partially replenished this deficiency in rainfall and has protected bee pastures. It has often been said that when conditions look the worst the best crops are secured and I must say a good crop is urgently needed in this area.

Miscellaneous: The annual bee-

keepers' meeting held at Ithaca on February 12-14 was well attended considering the fact that all roads were covered with a glare of ice on the 13th and two feet or more of snow on the 14th. An earlier date will probably be decided upon for the next meeting. Many worthwhile talks were given, especially those by Kelty, Dyce, Root and Townsend, and it is to be regretted that the many commercial as well as sideline beekeepers who never attend meetings were not present. These so-called "independents" will, I suspect, eventually find it necessary to join other beekeepers in seeking orderly marketing of honey. It is to be hoped that this will occur in the not too distant future. Not until producers work together can the problem of low honey prices be solved.—William L. Coggshall, Ithaca, New York.

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NEW JERSEY, April 3.

Weather: Those who have been longing for a good old-fashioned winter must surely have had their wish fulfilled this season. Especially since the beginning of the year we have been constantly besieged with bad weather. In Northern New Jersey there was about three feet of frost in the ground most of which is now gone with the recent heavy rain. Reservoirs are nearly up to normal but many wells are still low on water. It is now raining as this is being written but it has the definite feel of an April shower and we know spring will be here shortly. The local farmers say the season is about two weeks late. Even so in only a couple of weeks we will all be working the bees which will be a welcome experience again.

Honey Flow: Most localities in this state are very favorable as a source of early nectar and pollen. Between maples, willows, dandelions, fruit bloom, and other sources there are few apiaries that do not enjoy an opportunity to develop rapidly if they have wintered well, and other conditions are satisfactory. As near as I can learn the winter losses among the well-kept apiaries have not been heavy. With colonies under the management, or rather non-management, of some careless beekeepers the results are far different and this spring we can expect more than the normal winter loss in this class.

Miscellaneous: Just how this season is going to be is, of course, not known by anyone. One well-known New Jersey beekeeper said to me last week, "I have a feeling it's going to be a very good year". This seems to express the optimism that is apparently necessary in the make-up of all true beekeepers. Interest in bees by beginners is, as for several years past, at a high peak.

Regular monthly meetings are now held throughout the year in three counties, Bergen, Essex, and Passaic. All are held indoors in the evening and some valuable and interesting discussions take place at these gatherings. Every beekeeper is welcomed to any and all of these events and if the exact time and place of these meetings is not known to you don't hesitate to write to obtain the information. In addition there has been some talk for the past few months about an organization in Union County and still more recently of a similar move in Ocean County. While neither of these may materialize yet there is nevertheless a definite and growing interest in bees and it is reasonable to expect that the future will see at least several more local groups organize. One curious fact is outstanding in regard to this activity, and that is the greatest advances in local organization have so far been made in counties that are not the best in respect to honey possibilities. —John Conner, Caldwell, N. J.

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ONTARIO, April 3.

Weather: According to the calendar spring has been with us for two weeks, but by the looks of the snow-covered fields and blocked side roads, not to mention the low temperatures, winter is surely lingering in the lap of spring. Believe it or not, our bees have not had a real cleansing flight since November. Following November and December, which were much milder than usual, with few if any days warm enough for bees to fly after November 10, winter set in about January 1 in real earnest and it is still with us.

Conditions: To show that this is not merely a local condition, yesterday two of the boys motored down to

our apiaries in Wentworth County, that are situated some seven miles south and east of Hamilton. Usually the season there is a full week or more ahead of us here on the north shore of Lake Ontario, in York County. They found back roads filled with snow and at least twice as much snow in the fields as we have here. At the two apiaries in Wentworth County they found three colonies dead. Yes, they starved and we feel almost ashamed to admit it after all our past resolves to be sure that "this would not happen again". About 15% of our colonies are short of stores and I am inclined to think that Mr. R. E. Newell is right in his surmise (page 238, Gleanings, April 1940,) that the strain of bees is responsible for the great difference seen so often in matter of stores used for winter. At the two apiaries visited yesterday by the boys most colonies were clustered tightly and the tops of the combs had that peculiar light bluish look that is so often seen when colonies are wintering well. Other colonies right beside those tightly clustered, had bees from one side to the other of the hives and of course stores were all or nearly all consumed. These two apiaries were fed until combs were almost solid last fall and I am wondering what would have happened if each colony had been given two or three combs of pollen as advocated by certain writers during the past few months. Possibly such practice is only advocated when two full-depth brood bodies are used. We find that in the fall, the lower brood body is anything but nice to look at from a wintering standpoint, as the combs usually have a ring of honey around the tops and sides of the frames with great quantities of pollen filling up the bulk of the combs. Possibly localities differ but certainly insofar as **our** locations are concerned, an abundance of pollen is present always when two brood nests are used and to add pollen combs to single brood bodies would simply spell disaster.

[Note: No, there isn't room in a single-story brood chamber for a superabundance of honey and pollen and that is why we advocate the double brood-chamber hive, preferably the 10-frame standard size, with the top brood chamber crammed full and considerable honey and pollen in the lower brood chamber.—Editor.]

The few apiaries we have visited in the home district appear to be in condition similar to the Wentworth County yards, a few actual losses to date but many colonies short of stores. One apiary shows a number of colonies affected with dysentery as entrances are badly soiled, and when we consider that none of our bees have had a flight for nearly five months the wonder is that all colonies are not so affected.

Prospects: With snow on the ground all winter, there is little frost in the ground, and as the snow is melting very slowly, most of the water is entering the soil that was almost bone dry when winter set in. This is one bright spot in the picture as prospects were anything but good last fall.

As to clover, while it has been out of sight all winter covered almost continuously with snow, it seems reasonable to suppose that it is wintering all right—but another week or two will tell the tale.

Market: No change to report in honey market for as stated in the last two issues of Gleanings, no bulk honey appeared to be available. Retail sales are, I am told, rather quiet and with maple syrup season now on, this condition is likely to remain for some time.

Miscellaneous: Honey is being offered in chain and other retail stores at a price lower than wholesale in sixties or other large containers. This cheap honey was, of course, purchased by the stores before export honey was permitted to Great Britain and was bought in many cases at a very low price. A writer in the last issue of the Canadian Bee Journal suggests that it might be a good plan for some enterprising chap to buy up this cheap honey and put it in sixties and re-sell it again at a profit.

Referring again to the matter of winter stores consumption, if the strain of bees is responsible for such a difference in colonies (and I believe it is) then surely there is a field for experimentation worthy of the attention of our experts at the different stations on the continent. We can think of no greater boon to the industry than of being assured of putting the bees into winter quarters confident that they will not start brood rearing too early in the winter and thus use up their stores and the vitality of the old bees as well. Our experience at least is conclusive, that colonies that conserve their stores and their vitality, always are ahead when the time comes to put on the supers.—J. L. Byer, Markham, Ontario.

American Honey Institute News Notes

The following is an excerpt from the opening commercial on March 25, of "Young Dr. Malone" program sponsored by General Foods Sales Company, Inc.: ". . . so mother, when marketing today, buy Post's Bran Flakes and while you're about it, get a jar or comb of honey to serve with your Post's Bran Muffins. You know, Honey is a wholesome natural sweet, a splendid energy source and highly nutritional for your family. Why not plan to surprise the folks with Post's Bran Muffins and Honey for breakfast? And starting tomorrow, join the millions who eat Post's Bran Flakes regularly. For remember—'Life is swell when you keep well!' "

• • •

Did you read the article on Honey in the Sunday edition, March 24, of New York Times?

• • •

"On the Woman of Tomorrow" program this little squib went over the air on March 29: "By the way, this week there's a slogan being sent around to and by food experts suggesting 'Honey-for-Breakfast'. You might try honey and cream on your CREAM OF RICE—it's delicious with cereals—as well as on grapefruit, baked apples and other fruit."

• • •

We have designed something a bit different in a recipe folder for the honey folk of the nation. A six-page leaflet to fit in the cover of a five-pound pail! We will not have these folders gummed because they fit snugly. If you desire you may fasten these a bit more securely by using a strip of cellulose tape. Send for a sample with prices.

• • •

Among the recipes included in the above folder will be one for Honey Cinnamon Toast which is making a big hit with college students. This toast is made the way we like it in our homes.

• • •

How many of you would be interested in a window streamer featuring honey for sweetening summer drinks such as lemonade and iced coffee? This would help keep honey before the consumer, during the summer months. How many can you use at one dollar per one hundred?

Word is being received from all sections of the country that the March issue of Institute Inklings is the best up to date. If you did not receive a copy, please write to us and we shall be pleased to send you one.

• • •

Proctor and Gamble Baking School booklet contains a fine recipe for Honey Cocoanut Cookies and a Honey Glaze for doughnuts. Honey Macaroon Cake and Honey Macaroon Icing are included in this excellent booklet. Bakers will also want to make the whole wheat pie crust which contains honey.

• • •

The Institute hopes to receive the cooperation of the Poultry Industry by having them publish a recipe for Honey Angel Food Cake on their cartons. Have you tried this cake? For Washington's Birthday cherries may be incorporated.

• • •

Word has come to the Institute that the recipe "Fig Newtons" featured on Page 3 of the March issue of Inklings is one of the best recipes that the Institute has. This recipe is also found in the Institute's "Honey Cookies" leaflet.

• • •

Do you send new babies a jar of honey? Did you read the article on "Infant Feeding" on page 4 of Institute Inklings? Remember to ask your grocer to place honey in the Baby Food Section, Baby Week, April 29 to May 4.

• • •

May 5 to 11 is Raisin Week. Bakers will add flavor to their breads and cakes by soaking raisins in honey.

• • •

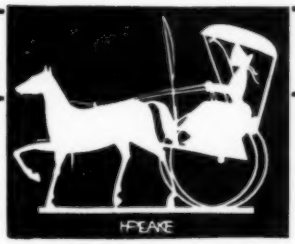
When Mr. Blank puts his honey in a grocery store at thirty-nine cents per five-pound pail, why not experiment a little? Ask the grocer to put in a mass display of your honey (use a dummy display for part if necessary) and charge fifty-two cents or sixty cents for your honey. See how much faster the honey with the higher price moves.

• • •

Beekeepers are making a growing and important contribution to the country's natural resources. The industry is of paramount importance.

XUM

Spinster



Jane Says:

We, too, had winter weather throughout March. Even when the sun began its work of melting the snow, cold winds persisted. Worst of all, our cellar was flooded, and the water would not go down. Boy and his brother got busy, took out the old snow-plow, and plowed out the ditch leading from the house, and incidentally, Boy took an impromptu bath. After the plowing came ditching, and presto! before night the cellar was emptied.

The bees stored in the cellar were becoming very restless, so, taking rash chances, Boy carried them outside to the old site, from which all snow had disappeared. This was after dark, at night, and quite early next morning those bees were zooming all about, seemingly delighted at their freedom. We think this was a wise move, as that first flight came in time to save the bees. White mould was forming on the bottoms of the hives. Incidentally, too, they had started brood-rearing in the dark cellar.

We think one hive is queenless, judging by the sound. In fact, there is as much difference between a hive with a stirring queen and a queenless hive, as there is between a home where a busy woman keeps things buzzing and in apple-pie order, and the home of a lazy slattern. A good queen introduced will soon change all that, and an order for one is going out tomorrow.

At our Ladies' Aid meetings, we use a Bible verse as roll call usually selecting some certain word to be used each meeting. When asked to suggest a word, I selected "Honey", and was much surprised when this was turned down with the objection that this word was so rarely used in the Bible. Being Scotch, and a bit stubborn, I hied me to my Bible study, and imagine my surprise when I found "honey" a very common word in Holy Writ. May I quote a few of the many instances where it is mentioned.

Spies were sent into the Promised Land and returned with the news that it was a land flowing with milk and honey.

When Joseph's brothers went down to Egypt to buy grain, and Joseph ordered them to bring Benjamin with them, next time, their father advised, "Carry down the man a present, a little balm, and a little honey, spices and myrrh, nuts and almonds". Honey, even at that time, then, ranked with costly spices.

Manna, sent down from the heavens to feed the grumbling children of Israel, was described: "The taste of it was like wafers made with honey". Everyone seemed familiar with the taste of honey.

In offering burnt offerings, the Israelites were ordered: "For ye shall burn no leaven, nor any honey, in any offering of the Lord, made by fire."

Samson made the mistake of telling his wife a secret, and he knew she had betrayed that secret when he was asked, "What is sweeter than honey?"

Jeroboam, anxious to consult the prophet Ahijah, sent his wife,—just as many a man has done on some errand he dislikes himself—and said to her, "Take with thee ten loaves, and cracknels, and a cruse of honey". This gift was to win favor.

Some of wise King Solomon's words regarding honey were,—"Pleasant words are as a honeycomb, sweet to the soul, and health to the bones."

"My son, eat thou honey, because it is good."

Honey in those early days was found in rocks and dripping from trees. Have we made so much progress after all?

Today we are trying to domesticate the honeybee, and partially have succeeded. We do not have to seek this luscious sweet in the wilds. It is at our very doors. Yet, I believe King David and King Solomon could teach us a great deal about the value of honey, were they on earth right now, and since the latter in his wisdom, pronounces it as health to the bones, why not feel assured that he knew what he was talking about?

Just how many uses have we found for it in these modern days?—Spinster Jane.

Talks to Beekeepers

M. J. Deyell

Throwing a Package into a Hive

The other evening I attended a county beekeepers' meeting in Ohio. There was considerable discussion on package bees, how to install them, etc. One experienced beekeeper told about meeting a beginner beekeeper who said that all he did when installing a package of bees was to throw the bees into the hive, put on the cover, and let the bees go to it.

This method sounds rather simple, and it might work, provided the hive receiving the package of bees contained an ample amount of combs of honey and also some empty combs in which the package of bees could establish a home.

If no combs of honey are available, it is certainly necessary to feed the bees sugar syrup continuously until nectar from natural sources is available in quantity.

A New Kink in Hiving Packages

One of the beekeepers attending the meeting mentioned the method he uses. He feeds the bees all of the sugar syrup they will take while the bees are in the shipping cage. When ready to install the package, he removes five frames from one side of the hive, then dumps about two-thirds or three-quarters of the bees out of the shipping cage into the empty space at the side of the hive. He then pushes the five frames over on top of the bees and places the bee-shipping cage with the remainder of the bees in the side not occupied by the bees and frames. The bees have a chance to crawl up on the combs and the remaining bees will leave the cage and join the others. The queen is released among the bees. As soon as the bees have left the cage it is removed and the remaining empty combs put in the hive.

This beekeeper told about losing a queen that flew out of the cage as he was about to put her in the hive. He stood perfectly still for a few minutes and the queen returned and lit on the lapel of his coat. He then caught her and put her in the hive.

Where the queen is shipped in the cage, with the package, it seems necessary to dip the cage containing the queen into thin syrup in order to wet the wings of the queen so she can not fly. The queen can then be handled safely.

No Honey at a Beekeepers' Banquet

Not so long ago I attended a beekeepers meeting at the close of which lunch was served. We had biscuit with maple syrup, salad, pickles, cake, and I have forgotten what else, but we had no honey. I wanted some honey to put in my coffee. Some one mentioned about there being no honey, and then a number of beekeepers woke up to the fact that honey should be served at the lunches put on by beekeepers.

I recall some few years ago attending a state beekeepers' banquet, and while the meal was in progress it was discovered that there was no honey on the table.

It would seem that the majority of beekeepers do not really believe in honey. If we, as beekeepers, do not use it and are not enthusiastic about its merits how can we expect the rank and file of those not interested in bees and honey, to use it?

A few days ago, I was entertained at a beekeepers' home over night. This beekeeper maintains a wonderfully fine roadside stand, and he sells a great deal of honey. To my surprise, no honey appeared on the table while I was there. I had to use sugar in my coffee.

Occasionally while attending beekeepers' meetings here and there over the country, I ask for a show of hands of those present who have honey on the table for each meal. It is encouraging to note that the majority of beekeepers do use honey but it is rather disheartening to find quite a number who do not use honey regu-

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SEEING IS BELIEVING. (See page 311.)

On March 28, 1940, the first day since early fall warm enough to examine bees we visited two Root Company apiaries and got the above pictures, which, with a few explanatory notes will speak for themselves. Note that the double-walled hives seem to have fewer bees than the single-walled.

(1) Rear top view of a colony in a single-wall two-story hive.
(2) Colony in a double-wall two-story hive. Note small 5/8" holes in front of hive.
(3) Front view of two-story colony in single-wall hive. Note small 5/8" hole in upper brood chamber.
(4) A two-story colony showing signs of dysentery around the 5/8" hole in upper brood chamber.
(5) A close-up of No. 1. Note how bright the bees are.
(6) A comb with brood after bees were shaken off. Most normal colonies had brood in three combs.
(7) Colony in packed hive. Bees were clustered more closely than in unpacked hives.
(8) Close-up of frame of brood with most of the bees shaken off.
(9) A top view of No. 4 after being opened, which was populous in spite of dysentery.

larly. I am sure that most of the enthusiastic beginner beekeepers do really use honey.

A Family of Honey Eaters

Last fall after attending the provincial beekeepers' meeting in Toronto, I spent an evening with my brother, a commercial beekeeper near Lindsay, Ontario. His name is Huber G. Burke. As you may know, most of the honey in that Province reaches the table in granulated form. It is almost as white as snow and the flavor is delicious. It is placed on a plate in the form of a brick, with a knife at the side. I shall never forget how each member of the family, especially the four boys, each cut off a large hunk and, of course, when the plate reached me I demonstrated my ability to eat honey. Those Canadians surely do know how to eat honey. Is it any wonder they use almost three times as much per capita as we Americans?

Apiary Management During May

Colonies wintered in single-story hives in the North usually become very strong in bees during the fruit bloom and dandelion flow. When such colonies have brood in eight combs it is time to put on a super of extracting combs without a queen excluder to provide comb space for brood-rearing and incoming nectar. This relieves congestion and, as a rule, prevents swarming.

Colonies wintered in double brood-chamber hives become very populous during the spring honey flow and it is necessary, as a rule, to give each colony a super of extracting combs to provide more comb space. This super may be given without the use of the queen excluder underneath, so that the queen may occupy the super for brood-rearing if the combs below are crowded. However, this makes more work later on when the queen is put down into the brood chamber, under the queen-excluder to restrict her to the brood chamber during the main flow.

Many who use the double brood-chamber hive confine the queen to this double brood chamber throughout the entire season and thus it is unnecessary to find the queen to put her down, at the beginning of the main flow.

Swarming Time

It is well that a colony gives advance notice of swarming. The bees build queen cells along the lower edges of brood combs. These cells are easily recognized because they are different from other cells. Instead of being horizontal, as are worker and drone cells, they are built in a vertical position with the opening at the lower end. They resemble peanuts in shape and size. When the cells are first started they resemble shallow cups. A little later on, as the sides of the cells are being built, each cell will be seen to contain an egg. A swarm will issue after the eggs have hatched and the larvae have developed, usually at the time the first cell is capped, which is about eight days after the egg is deposited in the cell.

During the spring months, swarm cells may be started and then destroyed by the bees when the weather turns cool, and thus nature takes care of the swarming situation.

When the Swarm Comes Out—What Then?

The old method of handling a swarm was to put it into a hive on a new stand. A much better method is to set the old, or parent hive, on a new stand a few feet away as soon as the swarm issues, turning its entrance away from its former position. Another hive containing either frames with full sheets of foundation wired, or drawn combs, is placed on the old stand to receive the swarm. Frequently the swarm will cluster on the limb of a tree. Sometimes the swarm clusters on the top of a tall tree which causes the owner to do some tree climbing. The limb, if it is not too large, may be cut off and the bees shaken directly in front of the hive on the parent stand. If it is impossible to saw the limb off, the swarm should be shaken into a large two-bushel basket with a wire wound around one of the handles so that after the bees are shaken into the basket the handle may be wired to the limb of the tree temporarily until the swarm, including the bees in the air, have clustered on the inside of the basket. The basket hangs from the limb in such a position that the bees may cluster on the inside just below the handle. After the swarm has clustered, it may be carried to the hive and dumped in front. A comb of brood taken from another hive and put into the hive intended for the swarm will attract the bees and cause the swarm to get established readily in the new home.

After two days, the parent hive which was moved to the new location can be given a turn to face the same

(Continued on page 332)

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Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

WHITE CLOVER comb honey. F. B. Sherman, Edgerton, Wis.

WHITE CLOVER in new cans. Lewis Klaty, Carsonville, Mich.

NEW CROP clover extracted honey. H. E. Crowther, Cass City, Mich.

FINE clover honey, case or car. Leslie A. Davis, R. R. 2, Union City, Ind.

FANCY clover honey, case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

NUMBER ONE cut comb clover honey. George Eykamp, Cuyahoga Falls, Ohio.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

FRANK RASMUSSEN, Greenville, Michigan. Fancy comb and extracted honey.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

BEST clover extracted. New 60's, case or ton lots, 6c. Irvin VanDevier, Medina, Ohio.

FOUR TONS choice light amber, extracted. What offer? Shirl Baker, Rodney, Michigan.

GOOD CLOVER extracted in sixties, 6c; light amber, 5½c. H. G. Quirin, Bellevue, Ohio.

WHITE, amber and buckwheat honey in new 60-lb. cans. Harry T. Gable, Romulus, N. Y.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

CHOICE clover-basswood and light amber honey in new 60's. Noah Bordner, Holgate, Ohio.

EXTRACTED 1938 and 1939 clover. Quotations on request. Scott Traxler, Scottsburg, N. Y.

88 CANS choice clover in new 60's, with inspection tags, 5½c. E. W. Redman, Ithaca, Mich.

MICHIGAN white clover in new sixties. Orval Dilley, Charlotte, Mich. (formerly Grand Ledge).

CHOICE clover honey, new cans. Case, $7.20. Sample, 10c. Martin's Apiaries, Owosso, Mich.

CHOICE goldenrod-aster honey in good 60's, $3.25, granulated. Earl Walldorff, Dunkirk, N. Y.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

LIGHT and amber honey in sixties and 5-lb. pails. Carl Holcomb, 1913 Francis Ave., Troy, N. Y.

BUCKWHEAT honey in 60's, $3.00 each, 10 or more, $2.75 each, F.O.B. here. Wm. F. Vollmer, Akron, N. Y.

MEDIUM AMBER in 60's, thoroughly strained, reasonable. J. Hassan, 1700 N. Franklin St., Philadelphia, Pa.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

LET US show you how you can save on your honey purchases. We also buy honey. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

FANCY white clover extracted honey, can or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

RASPBERRY and clover, blended by the bees in 60-lb. cans for 8c a lb. Sample for 20c. Elmer Hutchinson & Son, Lake City, Mich.

MICHIGANS' FINEST WHITE CLOVER HONEY—No disease, new cans, 6c. You will be pleased. John McColl, Tecumseh, Michigan.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

WHITE and amber clover, also buckwheat in kegs and cans. Sample 10c, deducted from cost. Coggshall & Son, Groton, N. Y.

SELECT LOTS white sweet clover, also processed white honey in 60-pound tins. A. I. Root Co., 224 West Huron Street, Chicago, Ill.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

WE HAVE fancy and No. 1 light clover honey, also buckwheat in 60's for sale. Write for prices. Finger Lakes Apiaries, Homer, N. Y.

CLOVER HONEY—White, choice amber and amber in new 60's, 5 and 10 pound pails; buckwheat in kegs and 60's. H. B. Gable, Romulus, N. Y.

EXTRACTED HONEY—White clover, 6½c; light amber, 6c; amber, 5½c; buckwheat, 5c; granulated comb honey, cheap. C. B. Howard, Geneva, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

WE STILL have best Michigan clover honey to supply our customers until the new crop is ready in July. New cans and cases. E. D. TOWNSEND & SONS, Northstar, Michigan.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—9 tons of finest clover extracted at 6c. F.O.B. Bellevue. N. B. Querin, Bellevue, O.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

WANTED—White and light amber extracted honey. George Eykamp. Cuyahoga Falls, Ohio.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—Carlots honey; state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HIGHEST cash returns made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Ky.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Apiaries, 12243 12th St., Detroit, Michigan.

FOR SALE

QUEENBEE PAINTING outfits, $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

25 ROOT standard hive bodies and 225 standard extracting combs. Guaranteed free from disease. Noah Bordner, Holgate, Ohio.

CUT COMB HONEY—Cartons and equipment. Get our prices on everything for cut comb honey. James Hilbert, Traverse City, Michigan.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

READY WIRED FRAMES—Scientifically correct wiring results in perfect combs reduces swarming 75%. Literature free. Sample 10c. A. E. Wolkow, Hartford, Wis.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S. Robinson, Mayville, N. Y.

HONEY JARS at cost for that roadside stand. Selling out 1500 cases 3-pound, 2-pound, 12-ounce, 5-ounce. Modernistic. Prices and samples on request. Luke Kill, Delphos, Ohio.

Three-Band Italian Bees and Queens

Northern production proved stock. Highest quality, young bees, good workers. Live delivery and satisfaction guaranteed.

—Prices—

2-lb. pkg. with queen	$1.90
3-lb. pkg. with queen	2.45
4-lb. pkg. with queen	2.95
5-lb. pkg. with queen	3.50
Young laying queen	.55

For queenless packages, deduct price of queen. Better Service. Immediate delivery.

W. O. Gibbs

Phone 150. Willacoochee, Ga.

Better Queens

Less Supersedure. More honey per colony. Service that is second to none. That is what our customers Say.

2-lb. pkg. with queen, ea. $2.15
3-lb. pkg. with queen, ea. 2.85

For prices on large lots write.
Italians—Caucasians.

Weaver Apiaries
Navasota, Texas

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Knight's Package Bees and Queens

LEATHER-COLORED ITALIANS
THE BEST HONEY GATHERERS

Prices including queens with packages.

Pkgs.	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	$2.00	$2.65	$3.30	$3.95
25 and more	1.85	2.45	3.05	3.65

Write for delivered prices, parcel post. If wanted with loose queens, introduced, add 15c each.

Select young laying queens, 75c; 25 and more, 65c each. All queens guaranteed mated pure. All packages will contain young bees, no drones, and full weight.

Jasper Knight
Hayneville, Ala.

FOR SALE

Italian Bees and Queens—Nothing but the Best. Bright Yellow and Three-Band. Queens, 50 cents each.

1 lb. Bees with young Queen, ...$1.50
2 lbs. Bees with young Queen, ... 2.00
3 lbs. Bees with young Queen, ... 2.50

Discount on 10 or more pkgs.

You send for them, they go.

GRAYDON BROS., Greenville, Ala.
Route 2.

Mountain Gray Bees For May

Send to us for bees that are gentle, easy to handle and good honey-gatherers. Caucasians have several quantity honey records to their credit. Prices, 2-lb. pkg., $2.45; 3-lb. pkg., $3.15. Each package contains a young vigorous queen and full-weight of young bees. Young queens, each, 75c. 15% discount to dealers. Bees and service guaranteed to please.

BOLLING BEE CO.,
Bolling, Ala.
16 years breeding only Caucasian Bees.

YOUR WAX worked into high quality medium brood foundation, 15c pound; 100 pounds, $10.00. Thin super, 22c; 100 pounds, $18.00. Medium brood, 10 lbs., $4.50. Fred Peterson, Alden, Iowa.

CARTONS for cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

PINARD nailless queen cage. Agents: Diamond Match Company, Los Angeles and Chico, California; Weaver Apiaries, Navasota, Texas. Samples. A. B. Pinard, 810 Auzerais Avenue, San Jose, California.

TOLEDO, Ohio's new Bee Supply Store offers you hives, foundation and equipment at prices you cannot duplicate. Accept honey and wax as payment. Rt. 3. Reynolds Road and Dorr St., Alexander Company.

FOR SALE—We accumulate bee supplies at our warehouses, slightly shopworn and fully serviceable, but discontinued for lack of sale. Write for complete bargain list. G. B. Lewis Company, Watertown, Wisconsin.

METHYL BROMIDE in 1 lb. cans at $1.00 each. Must go by express. 1 lb. for 1000 cubic feet. Kills not only wax millers and worms but the eggs. Printed matter available. A. G. Woodman Co., Grand Rapids, Mich.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

FOR SALE—You will make a big cash saving by letting us work your wax into either plain or wired foundation. Send us a list of your needs for our lowest, early order discount prices. We manufacture a complete line of bee supplies. WALTER T. KELLEY CO., Paducah, Ky.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

FINEST three-banded Italian queens. WHITE PINE BEE FARMS, ROCKTON, PA.

FOR SALE—Our quality queens will be ready the last of May. 50c each. Coggshall & Son, Groton, N. Y.

80 HIVES OF BEES, guaranteed free of disease, and supplies. E. C. Wetzel, Wehrle Drive, Williamsville, N. Y.

ITALIAN queens. N. J. Experiment Station stock, selected, carefully reared, 75c each. Circular. E. G. Carr, Pennington, N. J.

UNEXCELLED ITALIANS. Bees, 70c pound; queen, 55c; ten up 10% discount. Full weight, arrival, satisfaction guaranteed. Sowhatchie Apiaries, Hilton, Ga.

QUEENS with character. The best that can be produced. Shipped when you want them. At a price you can afford to pay. 20 years' experience. D. P. Green, DeLand, Fla.

GOLDEN QUEENS, excellent quality, hardy, gentle, productive, health certificate, service and satisfaction guaranteed. Personally reared, 75c. O. E. Brown, Rt. 1, Asheboro, N. C.

FOR SALE—Bees and equipment with good warehouse and locations or in lots of fifty or more colonies. Guaranteed no disease and good clean equipment. Will sacrifice. Mrs. Bert W. Hopper, Rocky Ford, Colorado.

FOR SALE—250 colonies of bees, guaranteed free from disease, mostly eight-frame hives. Wired combs and good hives. Comb and extracting supers with combs. Three honey extractors. Kate E. Smith, West Granville, N. Y.

CAUCASIAN package bees and queens ready April 10th. Untested queens, 60c each. 2-lb. pkg. $2.00, 3-lb. pkg. $2.50, 50 or more pkgs. 10% discount. Safe arrival guaranteed. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

FOR SALE—Having lost my wife, I will sell out all my bee supplies, new and used. Also 4 colonies of Caucasian bees in two-story hives. Guaranteed no foulbrood. Beekeepers bring your cars or trucks. Martin Carsmoe, Ruthven, Iowa.

PACKAGE bees and queens. Golden and leather-colored Italian. Prompt shipment. Bees that get the honey. No disease. Safe arrival. Book order early. Discount to dealers. Satisfaction guaranteed. Boudreaux Apiaries, Leonville, Louisiana.

EARLY PACKAGE BEES—Prompt shipment begins May 1. Two-pound package bees and queen, $2.45; 3-lbs., $3.15. Add 25c postage for each package. Choice Italian queen, 75c. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa., Box 363.

EXTRA YELLOW Italian queens, that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 75c each; tested $1.50 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

CAUCASIAN package bees. Reduced price but same high quality. Long-tongued, gentle, prolific, dependable workers. 2-pound package with queen, $2.00; 3-pound package with queen, $2.50. No discount. Safe arrival and satisfaction guaranteed. P. B. Skinner Bee Co., Greenville, Ala.

THE NORMA ROY APIARY—Italian bees with queen introduced, 2 pounds with queen, 1 comb brood, $2.00; 2 pounds with queen, 2 comb brood, $2.40; 3-pounds with queen, 1 comb brood, $2.50; 3 pounds with queen, 2 comb brood, $2.90. A health certificate with shipment. Norma E. Roy, Hessmer, Louisiana.

GOOD COMBLESS PACKAGE BEES AND QUEENS. Gentle, prolific, well-bred, three-banded Italians. Used for years by leading beekeepers of the U. S. and Canada. Many outstanding records for honey production. New cages—Full weight packages—No drones—No disease. 2-lb. pkgs. with select young laying queens, $2.45 each; 20 or more, $2.30 ea.; 50 or more $2.15 ea.; 100 or more, $2.00 ea.; 3-lb. pkgs. with queens, $3.15 ea.; 20 or more, $3.00 ea.; 50 or more, $2.85 ea.; 100 or more, $2.65 ea. Express or mail, f.o.b. here. Select young laying queens, 75c each; 20 or more, 70c ea.; 50 or more, 65c ea.; 100 or more, 60c ea.; Postpaid. Order now and have your shipping date reserved. Price list on request. H. C. Short, Fitzpatrick, Ala.

QUALITY 3-BAND ITALIANS. Carefully reared queens in standard four-frame nuclei. Northern production tested stock. Gentle, hardy, unsurpassed for honey-gathering which is the result of years of selective line breeding. Package bees with queen introduced on comb,—2-lb. pkg. with queen introduced and one comb of brood (1 to 9 pkgs.) $2.00 ea.; (10 or more), $1.90 ea. 50c for each additional comb of brood or pound of bees. Regular combless pkg. with queen caged, 2-lb. pkg. (1

Fresh from Our Yards

Immediate Shipment

We specialize in giving prompt service to Beekeepers who need bees at once or on a given date. We are prepared to make shipment within 48 hours after receipt of your order, often the same day order is received.

Italian Bees and Queens

	Queens each	2-lb. pkgs. with queen	3-lb. pkgs. with queen
1	$ .60	$2.00	$2.60
6 or more	.55	1.85	2.45
12 or more	.50	1.75	2.35

Tested Queens, each, $1.20. For larger packages, 60c for each pound of bees. Queenless packages, deduct price of queen.

15% discount on all prices after May 20.

Citronelle Bee Co.
Citronelle, Alabama

Thrifty Bees

Combless Packages and Queens

NEW LOW PRICES
PROMPT SHIPMENT

Full-weight packages of THRIFTY three-banded Italian bees.

Write or wire your requirements. We pay telegraphic charges on orders for 25 or more packages or queens.

W. J. FOREHAND & SONS
Fort Deposit, Ala.
Breeders Since 1892.

MERRILL BEE COMPANY
Italian Bees Queens

	Quantity	
With queens—1 to 50		50 to 5000
2-lb. pkgs.	$2.00	$1.75
3-lb. pkgs.	2.50	2.25

Untested queens, 50c each.

"Mississippi's Oldest Shippers"
Queen breeders for 30 years
Bucatunna, Miss.

XUM

It's the Truth!

There never was a product made,
This truth you must confess,
But some D - - fool will make it worse
And sell his stuff for less.

Low Prices—High Quality

Type	Quantity 1-11	12-50	Above
Caged-Queen			
2-lb. Pkgs.	$2.35	$2.10	$2.00
3-lb. Pkgs.	2.85	2.60	2.50
Loose-Queen			
2-lb. Pkgs.	$2.60	$2.35	$2.20
3-lb. Pkgs.	3.30	3.00	2.80
Queenless			
2-lb. Pkgs.	$1.70	$1.50	$1.35
3-lb. Pkgs.	2.20	2.10	2.00

Additional pound bees, 50c.

Wire Us For Rush Orders.

You Can Get
What You Want
When You Want it
Like You Want it

THE PUETT COMPANY

HAHIRA, GA.

May Queens for Summer Honey

Good THREE-BAND ITALIANS

For their good quality old customers continue their orders.
QUEENS NOW READY.

D. W. HOWELL
Shellman, Georgia.

A Good Rule to Go By

Buy your Italian bees and queens from

ALABAMA APIARIES
Mt. Pleasant, Alabama

2-lb package with queen $2.00
3-lb. package with queen 2.50
Queens, ... .65

Package Bees and Queens

Bright Three-banded Italians. Well improved stock. If you want the very best in bees that money can buy. A trial order will convince you that our loose queen package, prompt and safe delivery, is just what you have wished for.

2-lb. pkg., $2.45; 3-lb. pkg., $3.15.
Queens, 75c each.

TAYLOR APIARIES, LUVERNE, ALA.

to 9 pkgs.), $1.80 ea.; (10 or more), $1.70 ea. 50c for each additional pound of bees. Young laying queens (1 to 9), 50c ea. (10 or more), 45c ea. No disease, full weight, safe arrival. Small deposit to book order and reserve shipping date. A. D. St. Romain, Diamond, Louisiana.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly 7c6d. Apply Editor, Indian Bee Journal. Jeolikote, Dist. Nainital, U. P. India.

MICHIGAN BEEKEEPER is the "newsy" magazine. Published monthly. 75c a year, 2 years $1. Send 10c for single copy. MICHIGAN BEEKEEPER, 406 E. St. Joseph St., Lansing, Mich.

HELP WANTED

WANTED—Help in extracted honey production. State experience, wages wanted with room and board furnished. Schultz Honey Farm, Ripon, Wisconsin.

WANTED—Young man as helper in apiaries. Room, board furnished. Give age, weight and wages, reference in first letter. Archie Breakie, Grindstone City, Mich.

YOUNG MAN with some experience for coming season. State height, age, wages expected, etc. Board, room, and laundry furnished. Carl Soder, Stratford, Iowa.

INDUSTRIOUS young man of good habits and some experience for coming season. Room and board furnished. State full particulars first letter. Coggshall and Son, Groton, N. Y.

WANTED—Working manager salesman to operate packing plant and develop wholesale, retail honey trade. Give personal qualifications, experience, references. Eastern State, Box 9, Care of Gleanings.

WANTED—Trustworthy beekeepers' assistant with ability, good health, habits and some experience. Give qualifications, references, etc. Board and room furnished. Prevailing wages. Roger C. Lane, Trumansburg, N. Y.

MISCELLANEOUS

WANTED—Honey filtering and bottling outfit. Lose Bros., 206 E. Jefferson, Louisville, Ky.

WANTED—Bees and used equipment. Irvin Klaassen, Whitewater, Kansas.

SEEDS

9 BASSWOOD SEEDLINGS, 2 foot, or 6 Pink HONEYSUCKLE bushes, 12 inch, or 25 Caragana (Siberian Pea Tree) hedging 18 inch, postpaid for $1.00, plus any bank check exchange. Nectar producers. Lewis-Dadant dealers in this territory. Nicollet County Nursery, St. Peter, Minn.

DAIRY GOATS

DAIRY GOAT JOURNAL, Dept. 419, Fairbury, Nebr. (big monthly magazine, 3 years $1), gives complete information. Introductory 5 months, 10c.

Need Package Bees and Queens?

We will trade at attractive prices for your honey and beeswax. Write us.

THE FRED W. MUTH CO.
229 Walnut Street Cincinnati, Ohio

Don't Be Misled

Quality, Service and profitable returns cannot be had from packages at unreasonably low prices.

Imported Italian Bees

produce more surplus and require less honey for wintering than other strains. Give us a chance to prove our claims by purchasing your supply of

Package Bees from

Rossman & Long

Box 133 **Moultrie, Ga.**

Prices

After May 10th—2-lb. packages, $1.70; 3-lb. packages, $2.25. Loose queen packages, add 15c each. Nuclei with one frame brood, add 30c each.

Above prices to be in U. S. Money or its equivalent.

Judge by Results

A comparison with any other breed will PROVE to YOU the superiority of our own SPECIAL STRAIN of **COLD RESISTING**

GOLDEN BEES or Italians

Large, gentle, little inclined to swarm, and SUPER-PRODUCTIVE! Every queen is young, fertile, and personally reared.

SPECIAL PRICES

No Discounts—Subject to advance

Queens	May	After May
1 to 5	$ .75	$ .60
5 and over		.50
2-lb. Pkg. with Queen	1.98	1.88
3-lb. Pkg. with Queen	2.58	2.43
Extra lb. of bees	.60	.55

Spoerri Apiaries

St. Bernard P. O., Louisiana

Are You Losing Beeswax?

We render old combs, cappings and slumgum for beekeepers. Our steam wax presses get every available ounce of wax out of this material.

If you are rendering your own or having this work done elsewhere, give us a chance to show you what we can do. We specialize on **SLUMGUM** from presses that are not operated under water. We often get from 10 to 40 per cent wax from such material.

Send for our terms. Ship us your **BEESWAX.** Prices are higher.

DADANT & SONS, HAMILTON, ILLINOIS

Gaspard's Quality Golden and Three-banded Queens and Package Bees for Spring 1940 Delivery

2-lb. package with queen, one frame of brood	$2.00 each
3-lb. package with queen, one frame of brood	2.65 each
4-lb. package with queen, one frame of brood	3.35 each
5-lb. package with queen, one frame of brood	4.05 each
2-lb. package with queen, two frames of brood	2.40 each
3-lb. package with queen, two frames of brood	3.05 each
4-lb. package with queen, two frames of brood	3.75 each
5-lb. package with queen, two frames of brood	4.20 each

(Combless Packages With Queens)

2-lb. package with queen, each	$1.90	4-lb. package with queen, each	$3.25
3-lb. package with queen, each	2.55	5-lb. package with queen, each	3.95

Untested queens, 75 cents each. Tested queens, $1.50 each. Twenty-one Years' Experience—which assures you of prompt and efficient service. Satisfaction guaranteed, and a health certificate with each shipment. 10% will book your order, balance at shipping time. Discount to dealers. 1 to 9, net; 10 to 24, 10% discount; 25 to 50 or more 15% discount.

J. L. GASPARD, HESSMER, LA.

PACKAGE BEES AND QUEENS

Three-Banded Italians

We Can Fill Your Order Promptly

Prices as follows:

2-pound packages with queens	
1 to 4 pkgs.	$2.00 ea.
5 to 9 pkgs.	1.90 ea.
10 to 24 pkgs.	1.80 ea.
25 to 49 pkgs.	1.70 ea.
50 to 99 pkgs.	1.60 ea.
100 or more pkgs.	1.50 ea.

For 3-pound packages add 50c to each pkg. Queens, 50c each; 10 or more, 40c each; lots of 50, 35c each.

Young bees and queens that are guaranteed to be first-class or replacement without cost.

The Crowville Apiaries

Winnsboro, Louisiana

J. J. Scott, Prop. Rt. 1.

"She-suits-me" queens, 3-banded Italians, most excellent strain: One queen, 75c, 3 queens, $2.00. Stamps accepted for single queen.

Koolairy veil, $1.50 postpaid. SAFIN queen cage, $1, for ten; 15c for one.

ALLEN LATHAM
Norwichtown, Conn.

I Offer You

For Limited Time

2-lbs. bees and queen,.....$1.75

3-lbs. bees and queen,..... 2.25

Finest Italian queens,.....**40c**

10% required to book. Prices subject to change without notice.

J. F. McVay

Jackson, Alabama.

For a Better Crop

and less swarms.

Buy our Golden Italians. Gentle and prolific. Write for prices and discounts.

Eggleston Apiaries, Diamond, La.

ORCHARD POLLINATION IN NEW YORK

(Continued from page 291)

it is impossible to keep bees without having them poisoned.

The common practice of moving the bees into the orchard after the pre-blossom spray has been applied and removing them before the petal-fall spray has been applied usually avoids killing, and yet some cases of serious killing and many less serious cases have been observed. This is an important factor to be carefully observed by both fruit growers and beekeepers. Spray applied to trees in blossom or which falls on dandelion or cover-crop blossoms may do serious damage to the bees.

Another source of poison is found in the habit of the honeybee in collecting water from grass and weeds or the leaves of nearby trees. This seems to be worse if the poison is on foliage within a few feet of the hive. Midsummer killing has been serious when the weather was warm and dry and the bees were inclined to collect water from the surrounding leaves.

Moving and Locating the Bees

Fruit growers who keep bees have a special problem of location. If the bees are kept in the orchard during the summer they are exposed to serious danger of being poisoned, and may be in the way of orchard operations. If for convenience they are kept near the buildings in one location as is often the case, flight conditions during fruit bloom may be so poor that the chances for the bees to do effective work may be too few. It is not advisable to move the bees from a permanent location a short distance into the orchard because the field bees will return to the old location and die, or enter other colonies which may be left. Serious damage to the colonies, and a poor set of fruit may result.

The fruit grower who keeps bees for his own orchard may avoid the loss of field bees by keeping the bees in a permanent location at least two miles away. The bees may then be moved into the orchard for the fruit blossom period and removed to the permanent location after their work on the blossoms is over. If the bees are kept permanently near the orchard, loss of field bees may be avoided by moving them to another location several miles away at least two weeks before they are needed in the orchard. They may be distrib-

(Continued on page 331)

ORCHARD POLLINATION IN NEW YORK

(Continued from page 330)

uted in the orchard later, and when their work on the blossoms is done the order of moving is reversed.

Ithaca, New York.

Strong Nuclei

Two-nuclei in newly painted, ten-frame hive bodies, each of four combs bees, with hatching brood, honey and 1940 laying queen, $3.15 each nuclei. Our hive bodies have a sliding partition through the center, with screen wire top and bottom. Queens are loose and laying on arrival. Can ship any time you say. No disease.

WM. PIEFER & SONS
GAUSE, TEXAS

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

PETERSON'S

"Money Maker" Package Bees

Will increase your honey crop. You will find them the top in package bee value.

Young baby bees, full weight, no drones, speedy service, choice queens.

Combless pkg. with queen:
1½-lb. .....$1.35 each, any number
2-lb. ..... 1.75, 10 or more $1.65
3-lb. ..... 2.30, 10 or more 2.20
4 and 5 lb. pkgs. 50c per lb. extra.

Comb pkgs. with queens:		10 or more,
2-lb. on 1 comb	$2.00	$1.90
3-lb. on 2 combs	2.70	2.60

Safe delivery guaranteed or replaced at once.

THREE-BAND ITALIAN STOCK ALSO CAUCASIAN.

Honey Bee Apiaries
Sandwich, Ills.

Bright Italian Bees and Queens

Let Your Order Come

We have been breeding bright 3-banded Italian bees for nineteen years and have been shipping all these years to all parts of U. S. and Canada. Ours will please you. Let us prove it to you with our large yellow select 3-banded Italian bees. They are the honey-gathering kind. You will enjoy working with gentle bees. We ship full weight of baby bees with a young fertile queen in light weight cages. We are now ready to take your order for packages and queens. State health certificate furnished. Safe arrival and satisfaction guaranteed.

Packages F.O.B. Express Collect

2-lb. Pkgs. with queen	$1.80
Ten or more, each	1.75
3-lb. Pkgs. with queen	2.35
Ten or more, each	2.30
4-lb. Pkgs. with queen	2.80
Ten or more, each	2.70
Untested queens, each	.50

NORMAN BEE CO., LaPine, Ala.

THREE-BANDED ITALIAN BEES

2-lb. Standard Comb Package with young queen	$2.00
Combless Package with young queen	1.85
2-lb M. D. Comb Package and queen	2.75
Untested queen	.50
Additional lb. of bees	.60

Satisfaction Guaranteed.
Write for Discount.
J. P. Corona, P. O. Box 124, Kenner, La.

Palmetto Quality Queens

Again we solicit your orders for our high quality queens for the season of 1940. Prices as follows: 1 to 10 queens, 65c each; 11 to 50 queens, 60c each; 51 to 100, at 55c each. We guarantee satisfaction and a square deal.

C. G. ELLISON & SONS
Belton, S. C.

Look---Three-Banded Italian Bees and Queens

They are real honey-getting bees. They are gentle and easy to work with. A trial order will convince you. Satisfaction guaranteed. Write for prices.

ALAMANCE BEE COMPANY
Geo. Elmo Curtis, Mgr. Graham, N. C.

Select Italians
Package Bees-Queens
Record Crops

Here is your opportunity to get **Select-Improved Stock** with **Maximum Crops** back of them. We have been selecting **Breeders** for several years from colonies making **Record Crops** and meeting other requirements, as: **Gentleness, Non-Swarming, Size** and **Hardiness.**
We produce honey in the **North** and have every opportunity to select our very best **Breeders** in the **Field of Action** to be carried back South and used as **Breeders.**
Never any disease in our yards—Prompt Shipment—Health Certificate—Young Bees—No Drones—Safe Arrival and Satisfaction Guaranteed.

LOW MAY PRICES

	2-lb. with queen	3-lb with queen
1- 9	$1.90	$2.50
10-49	1.80	2.40
50-over	1.65	2.25

Select young queens 60c, any number

R. B. HERIER, Valdosta, Ga.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"Australasian Beekeeper"
Subscription 5 shillings per year. Start any time. Inquire for International Money Order for five shillings (Australian) at your Post Office.
Write now to The Editor, P. O. Box 20. West Maitland, New South Wales, Australia.

TALKS TO BEEKEEERS

(Continued from page 323)

direction as the hive containing the swarm. Then, after seven days, this parent hive may be moved to another location at least fifteen feet away. The moving should be done in the middle of the day when a large percentage of the old bees are in the field. When these field bees return and do not find their hive, they will easily find their way into the hive on the old stand containing the swarm, and will help to increase the population of this new hive, and, in turn, a larger crop of surplus honey may be expected.

In a short time, the old hive that has been moved to the new location, should have a young laying queen. If swarming occurs early in the season and the honey flow is long drawn-out, this parent hive may store some surplus, but usually no surplus may be expected from the old parent hive the same season.

Ample Stores Necessary

Due to the scanty honey flow last fall in some regions throughout the country, colonies are not likely to be over-supplied with honey this spring. Hundreds of colonies may starve, simply because the owners did not supply enough stores to make up a deficiency in honey last fall. Make sure that each colony is well supplied with honey or sugar syrup until the main honey flow is on. Prospects look good for a honey flow and all colonies are worth saving, so that a larger crop may be secured.

MACK'S QUEENS
(They Speak for Themselves)
List your orders for 1940.
We guarantee to please you.
HERMAN McCONNELL
Robinson. Rte. 2. Illinois

KELLEY
The Bee Man

BEES

Pure 3-banded Italians

2-lb. with queen	$2.00	10 or more	$1.85
3-lb. with queen	2.50	10 or more	2.40
Queens, each	.50	10 or more, ea.	.45

Write for special prices on lots of 25 or more swarms or queens. Write for summer prices on queens after May 25th. All queens shipped out of Paducah; swarms shipped from our own apiaries in Louisiana.

The Walter T. Kelley Co., Paducah, Ky.

MATING FLIGHT OF BEES

(Continued from page 293)

was practically none after 4 p. m. Contrary to statements in the literature, worker bees and drones were not unusually active about the hive entrance when the queen was flying. In some cases unmated queens were observed flying near the hive for as long as 15 minutes without any noticeable disturbance among other flying bees.

In 1939 Mackensen and Roberts, of the Southern States Bee Culture Field Laboratory, obtained some striking information concerning double matings. Their observations were made from June 5 to July 5, in a different mating apiary from the one used in 1937 and 1938. Of 43 marked queens, 21 mated once, 19 mated twice, and 3 made flights but did not show signs of mating. The breeding queen was from a different strain of bees from that used in 1937 and 1938.

Summary

By the use of queen guards at the entrance of mating hives, information concerning the flights of virgin queen bees was obtained in 1937 and 1938. Thirty-two of the 54 queens mated in 8 to 9 days after emergence, and the remainder mated in 6 to 13 days. Twenty-one queens began egg laying 3 days after mating, 13 in 4 days, 11 in 2 days, and the remainder in 1 to 8 days. Four queens mated twice in 1938, and 19 queens in 1939. Maximum drone flight took place from 2 to 3:30 p. m., with practically no flight before noon or after 4 p. m.

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1899. Benton, Frank. The honeybee, U. S. Dept. Agr., Div. Ent. Bul. 1, new series, 3rd ed., 118 pp., illus.

1814. Huber, Francis. New observations upon bees. Translated by C. P. Dadant, 1926. 230 pp., illus. Hamilton, Ill.

1932. Nolan, W. J. Multiple matings of queenbees. Md. State Beekeepers' Assoc., Rept. 23rd Annual Meeting, January 7, 1932, pp. 20-34.

1925. Parks, H. B., and Alex. A. H. Suggestions on queen rearing. Tex. Agr. Expt. Sta. Cir. 35, 19 pp., illus.

1926. Perret-Maisonneuve, A. L'apiculture intensive et l'elevage des reines. 3rd ed., 550 pp., illus., Paris.

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1935. Root, A. I. and E. R. The A B C and X Y Z of bee culture. 815 pp., illus. Medina, Ohio.

1913. Sladen, F. W. L. Queen-rearing in England . . . Ed. 2, 86 pp., illus. London.

1933. Zander, Enoch. Zeitgemasse Bienenzucht, Heft II. Zucht und Pflege der Bienenkonigin. Deut. Gesell. f. angew. Ent., Flugschr. 6, 45 pp., illus.

CAUCASIANS

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers—10% to 40% ahead of Italians.

CARNIOLANS

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolans were used in the recent Iowa Experiment Station test showing Carniolans best for Northern and Western conditions. Both races wintered here out-of-doors and bred in a climate like their native land, thus insuring their good qualities. Ask for Free Paper.

Prices—Untested queens, both races, 75c each. Ready May 20th on.

ALBERT G. HANN
Glen Gardner, New Jersey

STOP LISTEN LOOK

STOP wasting money on inferior packages.

LOOK at the results others are getting from Cutts' packages, LISTEN to reason. Only good quality packages pay profits. Poor packages are expensive at any price.

	2-lb. with queen	3-lb. with queen	Untested queens
1-25	$2.10	$2.75	$ .70
25-100	1.95	2.60	.65
100-up	1.85	2.45	.60

J. M. CUTTS & SONS
Rt. 1. Montgomery, Ala.

Queens and Package Bees

CAUCASIANS * ITALIANS
Over 25 Years' Experience
RIO GRAND VALLEY
HEADQUARTERES for TRUCKERS
On Weslaco Progresso Highway

Paying 30 cents a pound for Beeswax in exchange for Bees and Queens. Queens, 75 cents each. 2-lb. pkgs. bees with queen, $2.45 each; 3-lb. pkg. with queen, $3.15 each. One of our customers took 1620 queens on one truck at one time last spring to North Dakota.

We do lots of trading. What have you? WANTED HONEY. Send sample.

Blue Bonnet Apiaries
R. 1. Box 70, Mercedes, Tex.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

XUM

(Continued from page 279)

Ethan A. Andrews, Jr., 47 E. Lake Av., Govans, Baltimore
Seeger & Company, Frederick.
A. G. Hungerford, Newburg

MASSACHUSETTS:
Walter M. Copeland, Lexington
Ivan Rawson, Ashley Falls
Elmore G. Howes, Route 28, West Wareham
Emil Kellstrand, Rockland
Mrs. F. C. Howard, 138 Elm Street, Stoneham
Walter R. Witherell, Rte. 1, Easthampton
Franklin R. Mono, 17 Graves Street, South Deerfield
R. S. Whitehouse, West Roxbury

MICHIGAN:
A. G. Woodman Co., Scribner Ave. and Blumrich St., Grand Rapids

MINNESOTA:
Standard Lumber Co., Box 357, Winona
F. O. Gessner, Route 2, Forest Lake
H. E. Kiger & Son, Alexandria
Nicollet County Nursery, St. Peter
Erickson-Hellekson-Vye Co., Wheaton
Oklee Farmers Co-Op. Elevator Company, Oklee

MISSOURI:
Hankhammer Apiary Supply Co., 4354 Warne Ave., St. Louis
Rodeman Supply Company, 413 West Main St., Jefferson City
Neosho Seed Company, Neosho
J. B. McNeely, Route 1, Granby
L. A. Schott & Company, Benton
E. G. Zollicker, 300 N. Main, Windsor
J. Patton Ryals, Route 2, Huntsville
Irving E. Long, Marceline
Dr. E. L. Crowson, Box 94, Pickering

MONTANA:
Charles M. Smith, 1210 Lewis Avenue, Billings

NEBRASKA:
Boyd Hardware Company, Columbus
Root Brothers, Carroll
Newton Hardware Company, Orchard
H. B. Allen, Cozad
Fullerton Lumber Company, Concord

NEW HAMPSHIRE:
P. N. Townsend, Lebanon
Melvin J. Moses, Route 6, 35 Loudon Road, Concord

NEW JERSEY:
C. W Kautz, Route 1, Black Oak Ridge Road, Paterson
Milton H. Stricker, 323 Melrose Ave., Maple Shade

NEW MEXICO:
Roswell Seed Company, Roswell

NEW YORK:
L. M. Wilson, 1120 College Avenue, Elmira
John W. Closs, Granville
L. M. Deming, Edmeston
Thomas Coverdale, Leicester
H. J. Greulick & Son, Scotia
F. B. Loomis, Rushville
J. B. & Charles Merwin, Prattsville
Robert A. Stauble, Canton
E. S. Rock Co., 122 Congress St., Troy
C. B. Howard, 59 Lyceum St., Geneva
Earl S. Westfall, Schoharie
R. J. Smith, Ticonderoga
Yandik Brothers, Route 2, Hudson
Jonas Collier, Coxsackie
C. S. Rowe, 331 Clifton Ave., Kingston
Byron Jones, Petersburg
N. L. Stevens, Venice Center
Mrs. H. L. Case, Canandaigua.
Lester Stevenson, Route 2, Oakfield
Andrew Mahay, Johnstown
Niles Hillman, Route 1, Greenwich
Wm. C. Sossei, Jr., 2450-81st Street, Jackson Heights
George O. Brown, Route 5, Lockport
Feed Service, Inc., 226 Union Street, Poughkeepsie
Clarence Hartman, 1867 State Street, Watertown
R. J. Staub & C. H. Shanebrook, Preble
Frederick Ludwig, Mohawk

NORTH CAROLINA:
Griffin Feed & Seed Company, Monroe
Shelton's Feed Co., Hendersonville
Hopkins & Moore Supply Company, Reidsville
Ideal Paint & Hdwe. Co., Asheville
O. O. & Ray Rufty, Salisbury
R. L. Smith & Sons, Robersonville
Job P. Wyatt & Sons Company, Raleigh
Stanly Hardware Company, Albemarle
Spruce Pine Store Co., Spruce Pine
E. S. Hull, Box 1235, Asheville
Thompson Brothers, Mountain Park
Mocksville Hardware Co., Mocksville
A. K. Queen, Candler
Farmers & Merchants Supply Company, Charlotte
A. W. Preston & Sons, Belew Creek
A. G. Draughon, Yadkinville
J. M. Miller Hardware Co., Stony Point
Quality Feed & Seed Store, Burlington
W. R. Patton, Morganton
S. L. Collins, 615 North Trade St., Winston-Salem
Church Hardware Co., N. Wilkesboro
Stafford & Hastings, Kernersville
Smith Hardware Company, Goldsboro
C. H. Edwards Hdwe. House, Greenville

NORTH DAKOTA:
Fargo Seed House, Fargo
H. A. Schmitt, Mandan
Economy Supply Station, Mooreton

OHIO:
W. A. Coulter, 972 Cleveland Ave., Columbus
R. C. Bish, 229 Melmore St., Tiffin
Ohio Horticultural Service, Inc., 2060 High St., Columbus
Cliffdale Water Garden, 8412 Memphis Ave., Brooklyn Village, Cleveland
L. A. Mills, Route 5, Greenville
D. H. Horst, Route 2, Marshallville
Paul F. Blackmore, Jeffersonville
Fred Fries, 125 S. Third St., Hamilton
S. C. Woodring, Port Clinton
Chas. A. Hoopes, 1661 S. Freedom Ave., Alliance
Mellinger Seed Company, 706 Market Street, Youngstown
Central Ohio Apiaries, Millersport
Claude M. Mohrman, Wellington
Robert H. Graham, 1551 Home Ave., Akron
Carl L. Blosser, 407 Fort St., Bremen
Webb Prince, Route 1, Clarksburg
Wendell P. Smith, Galena
Spriggs' Market, Jamestown
Frank Foit, Wellston
August Weber Company, Marietta
Albert L. Arnold, Township Ave., Elmwood Place, Cincinnati
Forney's Stores, 1605 West Third St., Dayton
Bumgarner Orchards, St. Clairsville
McKnight Davis Hdwe. Store, 43 Court Street, Gallipolis
Dr. H. F. Brown, St. Paris

OKLAHOMA:
Horn Seed Company, 210 W. California Street, Oklahoma City
Muskogee Seed House, 110 North Main Street, Muskogee
Ada Seed Company, Ada
Binding-Stevens Seed Company, 24 West First St., Tulsa

PENNSYLVANIA:
Chester Roberts, Sharpsville
Ulsh-Shinkel Hdwe. Co., Lewistown
Earl E. Manges, Bard, P. O. Buffalo Mills
H. L. McElhaney, Jamestown

(Continued on page 335)

(Continued from page 334)

R. W. Coyer, Route 4, Slippery Rock
Floyd H. Sandt, Route 2, Easton
Quay Minnich, 156 N. Main, Red Lion
Simeon B. Beiler, Box 117, Intercourse
Gay-Murray Company, Tunkhannock
Raymond W. Fisher, York Road, Route 1, Carlisle
Lund Apiaries, 756 East 21st St., Erie
Oscar Farley, 89 Kinsey Street, Montgomery
Fred Crawford, Water Street, Everett
Wilt Hardware Store, Hollidaysburg
Shipmen's Feed Store, 471 Market St., Williamsport
Waynesburg Hdwe. Co., Waynesburg
Abel's Seed House, 12 North Ninth Street, Reading
Hans Hoch, Route 1, Bernville
Orrtanna Canning Company, Orrtanna
M. C. Strauser, 120 East Main Street, Bloomsburg
Commons' Hardware Co., Nanty Glo
Critchfield Electric Co., Somerset

RHODE ISLAND:

Ralph P. Vaughn & Son, Greenwich Avenue, Apponaug

SOUTH CAROLINA:

Standard Feed & Seed Co., Anderson
Mahaffey Feed & Seed Store, 630 S. Main Street, Greenville
Holcombe Seed Store, Greenville
Nalley Lumber Company, Easley
Holcombe Hardware Co., Westminster
C. M. Branch Hardware Company, Chesterfield
L. J. Davis, 159 East Green Street, Honea Path
Ware Shoals Dept. Store, Ware Shoals
N. H. White, Orangeburg
Checkerboard Feed Store, 1411 Assembly Street, Columbia
Bright-Wilson Company, Inc., Greer
Wimberly Feed & Seed Store, Rock Hill
A. H. Ezell, Spartanburg
Laurens Hardware Company, Laurens
S. C. Plant & Seed Co., Conway
Enterprise Hdwe. Co., Walterboro
Andco Feed & Seed Co., Anderson
Giles Hardware, Lancaster

SOUTH DAKOTA:

Maxwell N. Main Hdwe., Sioux Falls
M. W. Thompson, Toronto
Wm. Meier, Route 2, Box 4, Egan
A. G. Pastian, Brandon
Vermillion Honey Company, 1120 West Main Street, Vermillion
Economy Store, 65 Third Street, S. E., Huron
Hayes-Lucas Lumber Co., Madison

TENNESSEE:

D. R. Mayo Seed Company, 419 Wall Avenue, Knoxville
Guthrie-Bradley & Jones, Sweetwater
Clarksville Harness Company, 113 South Third Street, Clarksville
Kingsport Produce & Feed Company, 122 E. Market St., Kingsport
Chattanooga Seed Company, 500 Market Street, Chattanooga
Elizabethton Feed Store, Elizabethton
Security Feed & Seed Company, Johnson City
A. H. Harris, Route 5, Jackson

TEXAS:

Hinkle Lumber Company, Paris
A. W. Bulay, Liberty
C. K. McDonald, Route 1, Beaumont

VERMONT:

W. H. & W. S. Bristol, Vergennes
Carl J. Sykes, North Street Extension, Rutland
Roger S. Jones, Route 1, Hyde Park

VIRGINIA:

Bonham Brothers, Chilhowie
Danville Hardware Company, Danville
Diggs & Beadles, 603 East Marshall, Richmond
Wetsel Seed Company, Harrisonburg
Travis & Kelley, 103 Market Square, Roanoke
M. W. Hamilton, 8 Tams St., Staunton
Pennington Hardware & Furniture Company, Pennington Gap
Vernon Graves, 801 Commerce Street, Fredericksburg
Law Brothers & Keck, Inc., Chatham
J. H. Tisinger & Sons, Mount Jackson
W. Grossman & Son, Petersburg
Tolley's Hardware Co., Lexington
W. H. Sproles, Benhams
Landon L. Gouchenour, Route 1, Box 48, Woodstock
Abington Service Station, Abington
Johnson's Hardware Company, Bedford
Wise Hdwe. & Furniture Co., Norton
Farmers Service Store, Waynesboro
Federal Lumber Co., North Tazewell
George Harrison, Jr., Purcellville
Henry Hangleman, Claremont
Hillsville Hardware Co., Hillsville

WEST VIRGINIA:

Frank P. Cook, Maud
L. L. Lee & Son, Inc., Ronceverte
Matoaka Hatchery, Matoaka
Burkhart & Carroll, Bluefield
Gwyn Brothers Apiary, Route 5, Fairmont
Farmers Hardware & Seed Company, 514 Virginia Street E., Charleston
Mrs. Effa Wade King, Blacksville
Roberts Hardware Co., Clarksburg
Cavendish-Cyrus Hardware Co., 521 Fourteenth Street W., Huntington
Abraham Shriver, Box 62, Wadestown

WISCONSIN:

H. Hodgson, Rte. 2, Box 81, Waukesha
F. Geele Hardware Co., Sheboygan
Kundert Brothers, Monroe
Schlafer Supply Company, 501 North Bates St., Appleton
W. R. Hinrichs, Verona
W. T. Sherman, Elkhorn
H. W. Knight, Box 276, Dalton
Central Wisconsin Seed Co., Waupaca
Michael L. Weis, Allenton
Wm. N. Miller, Dodgeville
W. Diehnelt, P. O. Box 60, Menomonee Falls
Taylor Lumber Company, Boscobel
G. B. Lewis Company, 426 Montgomery Street, Watertown
Charles Jakel, Route 6, Curtiss
Powell Hardware, Palmyra
Angus Johnson, West Salem
Knaub & Wunderlich, Fountain City
Rall Manufacturing Co., Galesville
Frank Kopecky, Route 5, Box 473, Waukesha
A. C. Allen, 1130 West Pleasant Street, Portage
Hugo L. Hauch, Route 2, West Bend
John Pagel, 141 Park Ave., Medford
A. W. Schmidt Hardware, Oakfield
Roland R. Olson, Route 2, Box 55, Grantsburg

WYOMING:

Harry Ingalls, Basin
H. E. Bryant & Son, Box 484, Worland
Wyoming Honey Company, Douglas

G. B. LEWIS CO., WATERTOWN, WIS.

Branches at Albany, N. Y.; Lynchburg, Va.; Sioux City, Iowa; Springfield, Ohio

XUM

Quality Queens from Tennessee

Italian queens reared under most favorable conditions. If you prefer high quality rather than cheap price I invite your order.

EACH 50 CENTS.

L. E. Smith
Hollow Rock
Tennessee

Imported Stock

Leather-colored Italians

The best stock of Leather-colored Italians—queens and package bees. Bred from carefully selected and tested breeders, Imported from Northern Italy in 1938, for their gentleness and wonderful honey-gathering qualities.

2-lb. pkg. with select queen, 1 to 10, $2.00
3-lb. pkg. with select queen, 1 to 10, 2.50
4-lb. pkg. with select queen, 1 to 10, 3.00
Selected untested queen, each, ... .60

Write for prices on larger lots.

Book your order now and reserve your shipping date. Once we fill your order, you will always be satisfied with our prompt service, full weight, low supersedure, and safe arrival.

Over 12 years' experience.

You must be satisfied.

Dixieland Apiaries
Greenville, Alabama

DOWN THEY WENT

Down we come to meet competition with the lowest, but we are still offering first-class quality light Three-banded Italian Bees and Queens, and full-weight packages and queens that are laying and caged the day shipment is made, not weeks in advance.

My Hybrid Bees are very hardy and prolific and shipped with choice select light three-banded Italian queen.
My price is for comb or combless, queen caged or loose.
Am still open to orders which can be shipped out immediately.

ITALIAN BEES AND QUEENS
2-lb. package with queen $1.70
3-lb. package with queen 2.15

HYBRID BEES, ITALIAN QUEENS
2-lb. package with Italian queen $1.60
3-lb. package with Italian queen 2.00
Choice select untested queen, 1 to 10—40c; 11 to 49—38c; 50 on up—35c.
Will also swap queens for Bee Supplies.

PLAUCHE BEE FARM
T. A. Plauche, Prop.
Hamburg, Louisiana

Shaw's Three-band Italian Bees and Queens

As you scan these lines looking for bargains in bees and queens, and chance to read this ad, we have this to say:
For the past 18 years we have been supplying the northern honey producer his needs in bees and queens and it is a pleasure to look over our books and see the names of customers that have been with us every season since we began shipping.

THE REASON

He gets as good packages of young bees, headed with as good young queen as is possible to be produced by a breeder that loves the business.
Give us that order and we will not disappoint you.

Prices:
2-lb. pkg. with queen, $1.60; 3-lb. pkg. with queen, $2.20. Queens, 50 cents each.

A. E. SHAW
Shannon, Miss.

York's Package Bees and Queens

Quality Bred Italians More for Your Money

Untested queens, 1 to 9, 60c each; 10 to 49, 55c each and 50 up at 50c each. Tested Queens, double price of untested.

2-lb. pkgs. bees with queens, 1 to 9, $2.00 each; 10 to 49, $1.80 each and 50 up at $1.70 each.

3-lb. pkgs. bees with queens, 1 to 9, $2.65 each; 10 to 49, $2.45 each and 50 up at $2.25 each.

4-lb. pkgs. bees with queens, 1 to 9, $3.30 each; 10 to 49, $3.05 each and 50 up at $2.80 each.

For larger quantities, write for prices.

Book orders now for shipping dates wanted. Full weights, safe arrival and satisfaction guaranteed.

Special Summer prices after May 10th. Write us.

York Bee Company, Jesup, Georgia, U.S.A.

(The Universal Apiaries)

Smith's Superior Bees and Queens

It is our desire to give you bees and queens of the highest quality, at a reasonable price. Not cheap bees at a low price. Our bees will produce you a good honey crop under favorable conditions. We give good heavy packages, nice young queens, good service, in fact we guarantee to satisfy you and make you glad that you gave us your orders.

Prices to May 18.

	2-lb. pkgs. with queen	3-lb. pkgs. with queen
1-49 each	$2.10	$2.70
50-99 each	2.00	2.60
100 or more	1.90	2.50

Selected queens, 1-9, 65c; 10 or more, 60c each.

Prices after May 18.

	2-lb. pkgs. with queen	3-lb. pkgs. with queen
1-49 each	$1.60	$2.10
50 or more	1.50	2.00

Queens 1-49, 45c; 50 or more, 40c each.

Order direct from these prices.

N. B. Smith & Co.
Calhoun, Alabama

THAGARD'S

MASTER-BRED

Imported Italians

Are bred from the very best stock obtainable from Italy. Our breeders are carefully selected and tested by our skilled queen breeders.

Owing to the fact that we have nothing but imported stock in our queen yard you are assured of as pure Italians as if they had come from Italy.

Get our NEW PANIC PRICES on combless packages and queens.

SERVICE—QUALITY—QUANTITY

The V. R. Thagard Co.

Greenville, Ala.

Established 1918

Italian Bees and Queens

Breeding Queens Selected from the Famous Northwestern Ohio Clover Belt where we Produce Honey by the carload. Thirty-one Years' Experience in Northern and Southern States insures you bees and queens of the largest Honey Producing Strain possible.

	1 to 49	50 or more
2-pound packages	$1.65	$1.60
3-pound packages	2.15	2.10
4-pound packages	2.65	2.60
5-pound packages	3.15	3.10
Untested Queens	.55	.50
Tested	1.10	1.00

For Comb Packages, add 40c to Prices above for each comb. For queenless packages, deduct from Packages the price of queens in quantity. We ship the package with queen introduced, if wanted. This is superior to the so-called loose-queen package. We guarantee these queens introduced 100%.

D. C. JACKSON APIARIES
MOREHEAD APIARIES

FUNSTON, GA., OR CONVOY, O., U. S. A.

SOUTHERN MISSISSIPPI ITALIAN BEES AND QUEENS

FINEST QUALITY—FULL WEIGHT—FAST SERVICE
STATE INSPECTED—NO DISEASE—SATISFACTION GUARANTEED

Queens, Untested	$ .50	Tested	$1.00
2-lb. Pkg. with Queen	1.75	3-lb. Pkg. with Queen	2.25

LUCEDALE APIARIES, LUCEDALE, MISSISSIPPI

"Jensen's Right Now Service"

Package bees with their lives before them not old wintered-over, or worn by heavy honey flows. Queens with packages in dry cages for immediate release when bees installed in your hive or loose among bees if you so prefer.

	Queens	2-lb. pkgs.	3-lb. pkgs.
1- 25	$0.65	$2.25	$2.95
26- 50	.60	2.10	2.80
51-100	.55	1.95	2.65
101- up	.50	1.85	2.50

10% discount from above prices after May 15th.

GUARANTEE: Extra Quality Queens. Overweight of young bees. Absolute freedom from disease. Safe arrival on time agreed. Complete satisfaction. 5% extra queens and immediate replacement of any losses enroute.

JENSEN'S APIARIES, Macon, Mississippi

THE NEW

BEEHIVE LINE

Now light in weight—with more label space. Available in ½ lb., 1 lb. and 2 lb.

HAZEL-ATLAS GLASS CO.

WHEELING, W. VA.

HONEY JARS

In designing jars especially for honey packers Hazel-Atlas stresses light weight crystal clear glass which displays the beauty of your product—and from a practical side, jars that are easily packed and labeled.

Write for Free Samples

MASTERLINE

Available in 5 oz. to 4 lb.

XUM

Popular Low Prices on Package Bees, Queen Bees

Berry's Reliable Italian Bees After 45 Years of Selective Breeding

—Prices after May 12th—

	Each		Each
2-lb. pkgs. with queens, 1 to 10,	$1.55	10 or more	1.50
3-lb. pkgs. with queens, 1 to 10,	2.10	10 or more	2.00
Additional pounds of bees, ea.	.50		
Untested queen bees, 1 to 10,	.55	10 or more	.50
Tested queen bees, 1 to 10,	1.05	10 or more	1.00

Safe arrival and satisfaction we guarantee. Directions telling how to handle and a Certificate of Health accompany each shipment. Wings of queens clipped on request.
The South's Oldest Active Shippers of Package Bees.

M. C. BERRY & COMPANY, Box 684, MONTGOMERY, ALABAMA

SUPER FILLING STOCK

Ideal Package Bees will fill your hives quickly with bees and your supers quickly with honey—Full weight—Good queens—Prompt service—3-Banded Italians—Satisfaction guaranteed.

2-lb. packages, with queen	$1.65
3-lb. packages, with queen	2.10
Mated Italian queen	.40

(No discount on above prices.)
F.O.B.

THE IDEAL APIARIES
Wiggins, Miss.
—Prices net—Payable in U. S. funds—

QUEENS

Sold out on packages. Have plenty of leather-colored queens bred from northern selected stock. Untested queens 45c each. Mr. O. D. Rivers formerly of Paris, Texas, is in charge of the queen yards.

Walter Orange & Son
Ocean Springs, Miss. Ruthton, Minn.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

Look! What a Bargain!

The same stock of three-banded Italian Bees and Queens you have always got from Shaw & Homan. Bred by the same breeder.

We guarantee our customers to get full-weight young bees, young queens, quick delivery, and in first class condition. If you don't believe we will treat you right, just give us a trial.

2-lb. pkg. with queen	$1.50
3-lb. pkg. with queen	2.05
Queens, each,	.40

Homan Bros.
Shannon, Miss.

(Continued from page 308)

National Ladies' Auxiliary—Chairman, Mrs. T. W. Burleson, Waxahachie, Texas.
Texas Apicultural Research Laboratory—H. B. Parks, Rt. 1, San Antonio, Texas.
Extension Specialists in Beekeeping—Alabama, W. A. Ruffin, Auburn; Alberta, W. G. leMaistre, Edmonton; British Columbia, A. W. Finlay, New Westminster; California, J. E. Eckert, Davis; Connecticut, L. B. Crandall, Storrs; Delaware, John M. Amos, Newark; Florida, R. E. Foster, Gainesville; Illinois, V. G. Milum, Champaign; Indiana, B. Elwood, Montgomery; Iowa, F. B. Paddock, Ames; Kentucky, W. A. Price, Lexington; Louisiana, E. C. Davis, Luling; Manitoba, L. T. Floyd, Winnipeg; Maryland, Geo. J. Abrams, College Park; Massachusetts, F. R. Shaw, Amherst; Michigan, R. H. Kelty, Lansing; Missouri, George D. Jones, Columbia; Nebraska, O. S. Bare, Lincoln; New Brunswick, H. G. Payne, Truro, N. S.; New Hampshire, J. R. Hepler, Durham; New York, Geo. H. Rea, Ithaca; North Carolina, C. L. Sams, Raleigh; North Dakota, F. Gray Butcher, Fargo; Nova Scotia, H. G. Payne, Truro; Ohio, W. E. Dunham, Columbus; Oklahoma, C. A. Stiles, Stillwater; Ontario, E. J. Dyce, Guelph; Oregon, H. A. Scullen, Corvallis; Pennsylvania, E. J. Anderson, State College; Saskatchewan, R. M. Pugh, Regina; South Carolina, E. S. Prevost, Clemson; Texas, C. Siddall, College Station; Virginia, H. W. Weatherford, Vernon Hill; Washington, Dr. Webster; Wisconsin, Wisconsin State Horticultural Society.
Where we did not hear from a state, we repeated last year's information.

Garon's Three-Banded Progeny Test ITALIAN BEES and QUEENS

Use our Renowned Quality-Bred Progeny Test Bees to beat the lateness of this Spring.
Our prices place Record-Breaking Quality within reach of all.
(See our previous ads for details.)
2-lb. packages with queens $1.75
3-lb. packages with queens 2.25
Queens @ 45c each—For 100 or more, @ 40c each.

Garon Bee Company, Donaldsonville, La., USA.

MOTT'S NORTHERN BRED ITALIANS

Thirty-fifth year rearing from this strain. Package bees, 2-lb., $2.45; 3-lb., $3.15, with loose queens. From my branch in Alabama. May queens, $1.00; 3, $2.50. June, July, $1.00; two or more, 75c each; 50, 70c; 100, 65c. Fair to good breeders, $2.00, $3.00 and $5.00.
Satisfaction guaranteed.
E. E. Mott, Glenwood, Mich., U. S. A.

Yes, Sir, 1940 Special Price
Italian Package Bees With Queens.

	2-lb.	3-lb.
1- 9	$2.00	$2.55
10-49	1.80	2.35
50-up	1.70	2.25

For comb package, add 25c to above price. 10% down books order. Health certificate, full weight, safe delivery guaranteed.
Address HESSMER BEE FARM
Hessmer, La.

FLASH

QUALITY bees and queens
OVER-WEIGHT packages
PROMPT service

AT NEW LOW PRICES

After May 10th

	1-24	25-99	100-up
2-lb. pkg. with queen	$1.35	$1.30	$1.25
3-lb. pkg. with queen	1.75	1.70	1.65
Untested queens	.35	.30	.29

Write for prices on larger packages. Give us a trial and we will convince you.

GREENVILLE BEE CO.
Greenville, Ala.

Quality Italian Bees and Queens

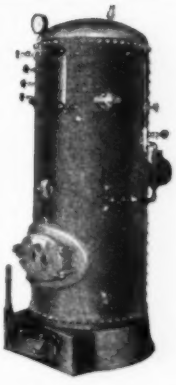
2-lbs. with queen $2.08
3 lbs. with queen 2.50
Untested queen ..... .65
Are gentle. Every effort is taken in making every queen and every package the height in quality. Compare them with others. Place your order where you get quality in the queen. No discounts.
B. A. ANDERSON, OPP, ALA.

Steam Boilers

We specialize in Boilers suitable for beekeeper use. Delivered prices quoted to any part of the U. S. A.

Send for special circulars.

A. G. Woodman Co.
Grand Rapids, Michigan



Loose Queens Package Bees

QUEENS introduced from frames of hatching brood. Assurance of vigorous young bees which reduces supersedure. Shipment from Southern Apiaries, prompt service, three-band Italians.
Prices after May 10th

		10 or more
2-lb. with young queen,	$1.65;	$1.60
3-lb. with young queen,	2.50;	2.40
4-lb. with young queen,	3.10;	3.00
5-lb. with young queen,	3.70;	3.60

Health certificate and safe delivery guaranteed.
BYRON FREY
2758 Griffith Berkley, Mich.

Why Take a Chance?

Nuclei 2 and 3 frame size with queen.. Large orders delivered by truck to northern beekeepers at a big saving, also 2 and 3 lb. packages. Italian or Caucasians.
Write for information and prices.
R. D. Jenkins, San Benito, Tex.

XUM

Pettit's Package Bees and Queens

You Must Be Satisfied
Gentle Workers
Best Young Queens
No Drones

Quantity	Twos Each	Threes Each	Fours Each	Fives Each	Extra Queens Each
1-11	$2.45	$3.15	$3.85	$4.55	.75
12-23	2.30	2.95	3.60	4.25	.70
24-49	2.15	2.75	3.35	3.95	.65
50-up	2.00	2.55	3.10	3.65	.60

Further discounts on large quantities.
Cash before shipping. Safe arrival and satisfaction guaranteed.
Never before were we so well prepared to give service.

MORLEY PETTIT, TIFTON, GEORGIA, U. S. A.

Queens

26 Years a Queen-Breeder

Our Old Reliable 3-Banded Italians are the best all-round bees to be had. Our queens are reared from very young larvae which insures unusual vitality and greatly lessens supersedure. We have customers who have used our queens over 20 years. There is a reason, THEY SATISFY.
1 to 12, 75c; 12 to 99, 65c; 100 or more 60c.

JOHN G. MILLER

723 C Street — **CORPUS CHRISTI, TEXAS**

MY CARNIOLANS SATISFY BETTER

Jan Strgar strain. Gentler bees, whiter combs, more honey.
Satisfaction guaranteed. Queens introduced free.

Combless package:	2-lb. bees, queen, $1.95;	3-lb. bees, queen, $2.45
M. Dadant Comb pkg.	2-lb. bees, queen, $2.50;	3-lb. bees, queen, $3.00
Standard Comb pkg.	2-lb. bees, queen, $2.00;	3-lb. bees, queen, $2.50

Extra queens, 50c.

EPHARDT'S HONEY FARMS, LETTSWORTH, LOUISIANA.

1940 Package Bees and Queens 1940

YES, NOW READY — **AT LOWER PRICES** — SAME SERVICE SAME QUALITY

—AS GOOD AS MONEY CAN BUY—

SUPERIOR QUALITY—LARGE SUPPLY—QUICK SERVICE—FULL WEIGHT—LIGHT SHIPPING CAGES—YOUNG BABY BEES—CHOICE QUEENS

The queen is the most important item in a package, as a colony of bees depends largely on the queen, with a proven fine strain of Bright 3-Banded Italians, plus a moderately steady honey flow. We produce large queens fully matured, more prolific and long lived, produces worker bees gentle, easy to handle. Safe arrival, satisfaction guaranteed, health certificate furnished.

	—Prices— 1 to 49	50 to 100
2-lb. pkg. with queen,	$1.75 ea.	$1.70 ea.
3-lb. pkg. with queen,	2.35 ea.	2.25 ea.
Untested queens, ...	.50 ea.	

Norman Bros. Apiaries, Ramer, Ala.

NORMAN'S

BRIGHT ITALIANS

NOW READY

Try John A. Norman's pure 3-Band Italians and be sure of getting complete satisfaction. I am prepared to furnish you with the finest quality young genuine Italian worker bees and the most select laying Italian queens, shipped in light weight cages, well ventilated. Full weight packages, prompt and efficient service, safe arrival and satisfaction guaranteed in U. S. and Canada. State Health Certificate furnished. Packages F.O.B. Express Collect.

Untested Queens $.45 25 or more $.40
Tested Queens .. .90 25 or more .85
2-lb. pkg. with queen 1.75
10 or more 1.70
3-lb. pkg. with Queen 2.30
10 or more 2.25

JOHN A. NORMAN, LaPine, Ala. Rt. 2-Box 38

Prices Reduced

Effected May fifth

	1 to 49	50 or more
2-lb. pkg. with queen ..	$1.80	$1.75
3-lb. pkg. with queen ..	2.35	2.25
4-lb. pkg. with queen ..	2.90	2.80
5-lb. pkg. with queen ..	3.45	3.35
Queens	.50	.40

Effective May twentieth

2-lb. pkg. with queen ..	$1.60	$1.55
3-lb. pkg. with queen ..	2.20	2.15
4-lb. pkg. with queen ..	2.75	2.65
5-lb. pkg. with queen ..	3.30	3.25
Queens	.40	.35

These prices will affect all orders already booked for shipment after these dates.

Sullivan, Wright & Co.
Gilbertown, Alabama

Better Bred Queens

"Three-Banded Italians"

Bees, bees, bees, we have plenty of them. Can fill your orders promptly. Don't hesitate to send them to us.

2-lb. pkg. with queen $1.75
3-lb. pkg. with queen 2.25
4-lb. pkg. with queen 2.75
Queens 55c each.

Prices after May 15: 25c less on pkgs., queens 35c each, 3 for $1.00.

CALVERT APIARIES, Calvert, Alabama

PACKAGE BEES AND QUEENS

Your choice of queen.

CARNIOLAN, CAUCASIAN, ITALIAN

From one package to a truck load will receive our special attention. We take special pride in our ability to fill large orders promptly. A quarter of a century of efficient service, in the same locality, is our record.

My motto through the years: I will expect to do business with you again.

	1-9	10 to 49	50 or more
2-lb. package bees with young select laying queen, each ...	$2.25	$2.00	$1.75
3-lb. package bees with young select laying queen, each ...	2.90	2.60	2.35

You can pay more but you cannot get better bees or fairer treatment.

H. E. GRAHAM, **Cameron, Texas**

XUM

Lady-Like Caucasian Bees

Genuine Mountain grey strain, the kind that bring in honey when others fail.

Two-pound packages, ... with queen, each $2.45
Three-pound packages, .. with queens, each, ... 3.15
Select untested queens, .. each, ... .75

Caucasian Apiaries
Brooklyn, Ala.

RELIABLE SERVICE
Reliable Package Bees and Queens
Three-banded Italian Bees and Queens

I produce and sell a very high quality queen and package of bees. Bred for those who appreciate quality and production.
Price list via Express Collect. For shipments leaving here after May 11th. Booked to capacity on earlier dates.

2-lb. packages bees with select untested Queen

1 to 10 packages	$1.95 each
10 to 50 packages	1.85 each
50 to 100 packages	1.75 each
100 or more packages	1.65 each

3-lb. packages with select untested Queen

1 to 10 packages	$2.55 each
10 to 50 packages	2.45 each
50 to 100 packages	2.35 each
100 or more packages	2.15 each

For larger size packages add 50 cents per pound for each additional pound of bees wanted.
Select Untested Queens, 50 cents each; 50 to 100 queens, 45c each; 100 or more queens, 40c each. Select Tested Queens double the price of untested queens.
All prices quoted in U. S. Money.
Service and Quality guaranteed on everything I ship.

W. E. HARRELL
Hayneville, Alabama

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